

DOCUMENT DATA FORM

Your Name: Nick Carino

Document Title or Description (max. 254 characters): Circle: Same as cover (or fill in below)

*Drawing Book 8, Chapter 8: Miscellaneous Details
Below grade*

Include work order no. and floor no. if applicable

Roll # DB03

Doc. ID (report #, dwg. #):

Document Date: *1948-74*

Document Author Name:

Author Organization:

SHC&R

KEYWORDS - HIGHLIGHT ALL THAT APPLY

| Level 1 | | | |
|-----------------------|--------------------------|---------------------------|-----|
| Bankers Trust | Project 4 | WTC 1 - North Tower | Add |
| <u>Below Grade</u> | Project 5 | WTC 2 - South Tower | |
| Concourse | Project 6 | WTC 3 - Marriot Hotel | |
| Electrical Substation | Project 7 | WTC 4 - South Plaza Bldg. | |
| Liberty Plaza | Project 8 | WTC 5 - North Plaza Bldg | |
| PATH Station | WFC 1 - Oppenheimer Dow | WTC 6 - Customs House | |
| PATH Terminal | WFC 2 - Tower B | WTC 7 | |
| Project 1 | WFC 3 - American Express | WTC Complex | |
| Project 2 | WFC 4 - Tower D | WTC Plaza | |
| Project 3 | | | |

| Level 2 | | | |
|--------------------------|-----------------|----------------------------|--------------------|
| Accident analysis & risk | Fire protection | Misc. Performance Problems | <u>Structural</u> |
| Architectural | Fire service | News coverage | Tenant alterations |
| Data request | Landscaping | Police | Tenant Space |
| Emergency management | Management | Security | Add |
| Evacuation | Mech./elec. | | |

| Level 3 | | | | |
|-----------------------|----------------------|--------------------------|-------------------|----------------------|
| 1993 explosion | Cranes | Frame | Roof | Weight |
| A/E fitout | Criteria | Frame analysis | Safety | Weld detail |
| A-242 | Dampers | Frequency | Schedule | Weld size |
| A-36 | Debris | Fuel | Sculpture | Welding |
| A-497 | Deck | Furniture layout | Security system | Wind |
| Aircraft impact | Deflection | Generators | Shear knuckle | Windows |
| Air cooled condensers | Demolition | Guidelines | Shear test | Yield strength |
| Analysis | <u>Design</u> | Gypsum board | Shear Stud | Add |
| Angles | <u>Detailing</u> | Hat truss | Shop drawings | <u>Drawing books</u> |
| Antenna | Doors | Human comfort | Shortening | |
| Artifacts | Drawings | HVAC | Slab | |
| Asbestos | Eastern States Steel | Index | Slurry wall | |
| Base plate | Egress | Inspection | Smoke control | |
| Beams | Elevator | Insulation | Smoke test | |
| Bid documents | Elevator Shaft | Job number | Spandrel beam | |
| Bid Invitation | Emergency | Joist | Specifications | |
| Bow tie | communications | L-50 | Splices | |
| Bracing | Equipment | Lighting | Sprinkler | |
| Bridging truss | Erection marks | Loads | Stability | |
| Building code | Errors & Omissions | Maintenance | Stairways | |
| Calculations | Escalator | Marking | Standards | |
| Carpet | Expansion joint | Mesh reinforcement | Steel | |
| Ceilings | Exterior columns | Mill inspection | Steel composition | |
| Certification | Fabrication | Model | Stiffness | |
| Chillers | Family member | Mullion | Structural review | |
| Cladding | Field survey | Operations | Surveillance | |
| Collapse | Fire alarms | Paint | Survey | |
| Columns | Fireproofing | Partition layout | Survivor | |
| Communication systems | Fire spread | Partitions | Tenant list | |
| Composite truss | Fire testing | Photos | Tenant occupancy | |
| Computer output | Firetower | Pipes | Testing | |
| Computer program | Flag Pole | Plumbing | Tie | |
| Concrete | Flammability | Prestressing | Tolerances | |
| Connections | Floor | Probability, uncertainty | Transfer Girders | |
| Construction | Floor load | Quality control | Triad | |
| Contract | Floor slab | Ramp | Truss | |
| Core beams | Floor system | Reinforcing | Vestibule | |
| Core columns | Floor trusses | (strengthening) | Vibration | |
| Corrosion | Formwork | Renovation | Walls | |
| Cracking | Foundations | Repair | Water supply | |
| | Fracture | Research & Development | Weather | |

REVISIONS

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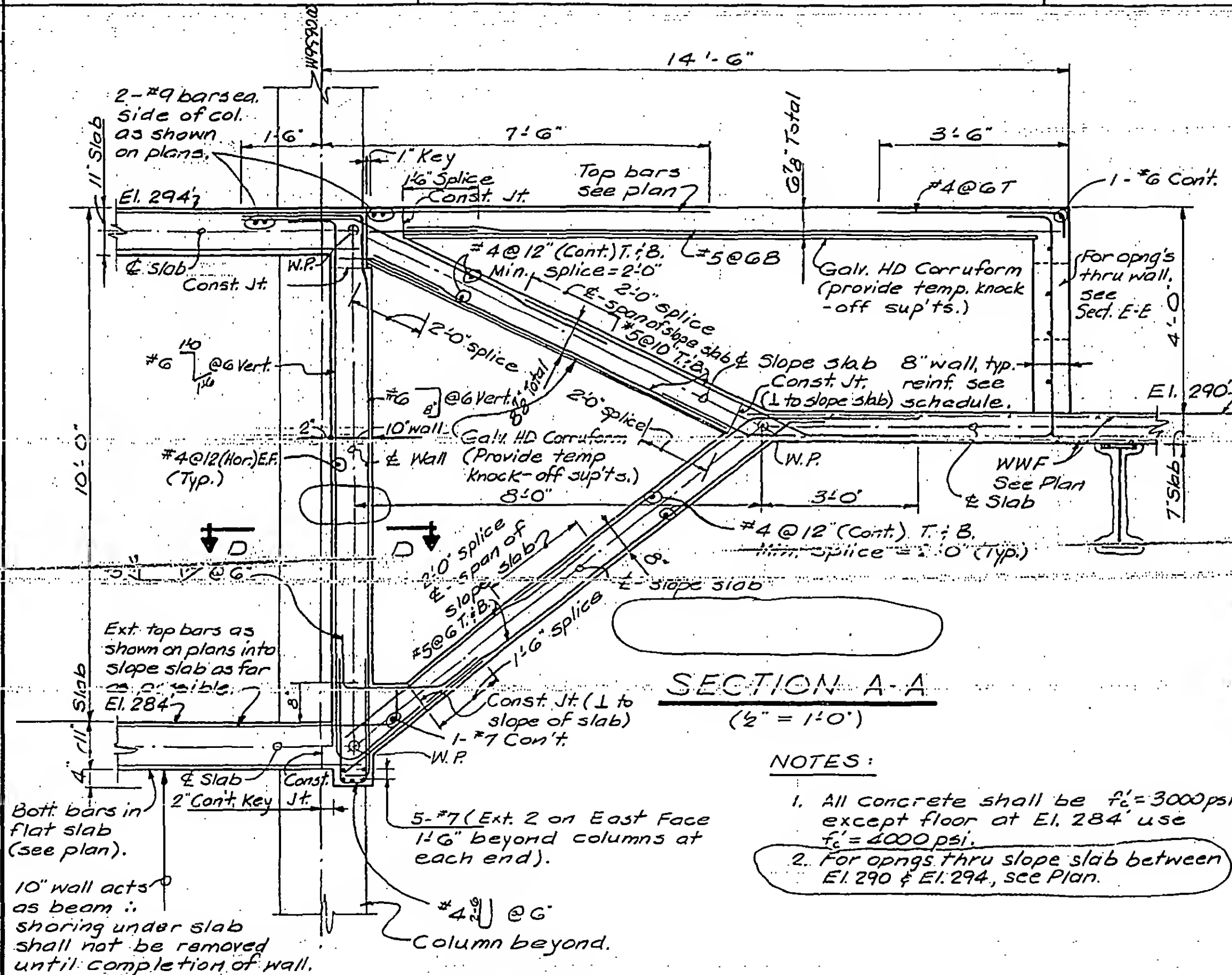
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REVISIONS

7-18-69



UNCLASSIFIED

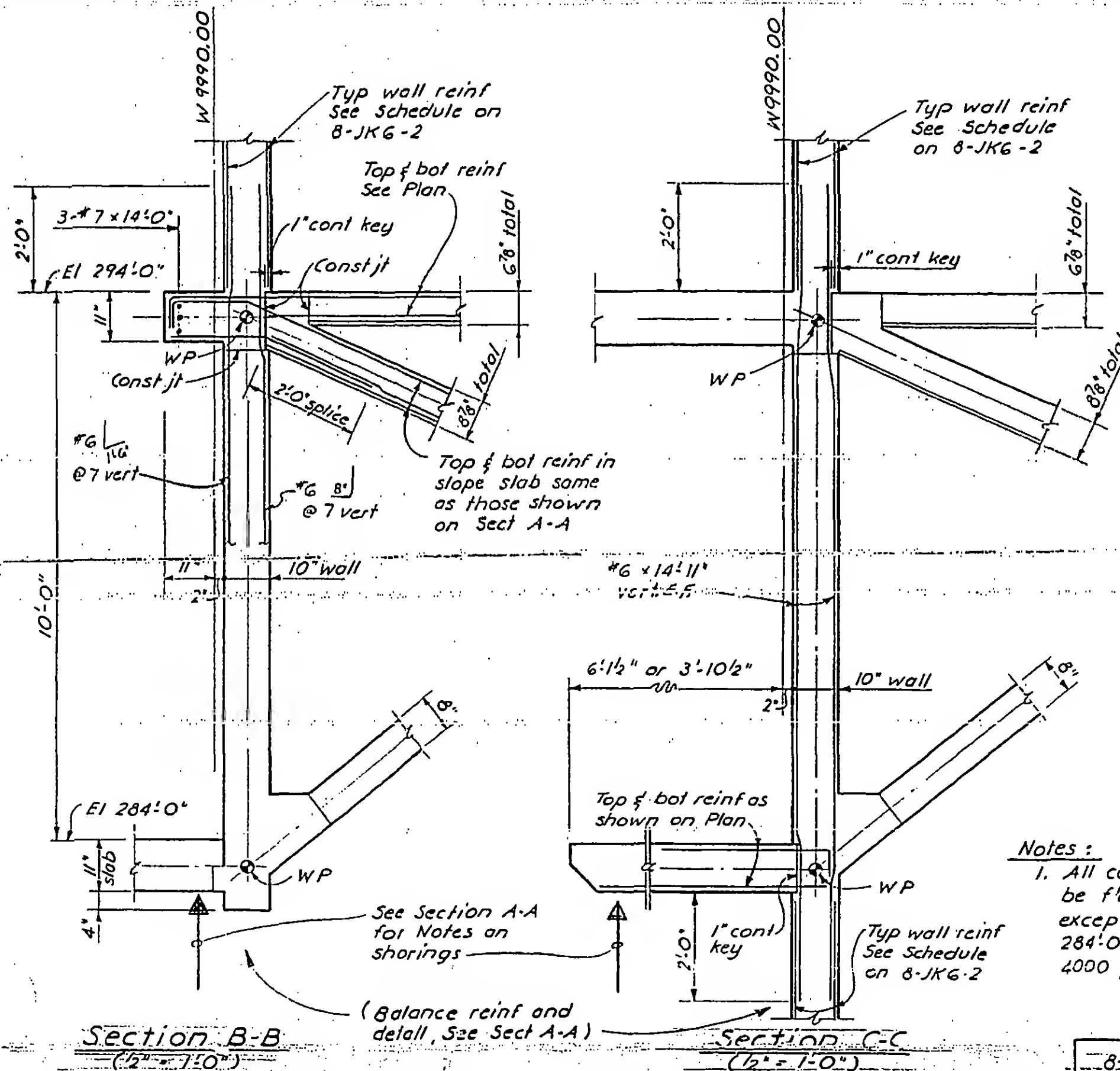
DRAWN
G.S.

E.L.

8-JK8-4.1

REVISIONS

7-1-69 GEN.
REV.



Notes :

1. All concrete shall be $f'_c = 3000$ psi except floor at El 284'0" use $f'_c = 4000$ psi.

DESIGNED

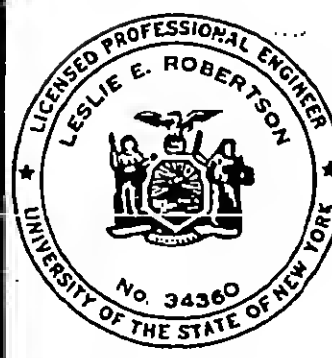
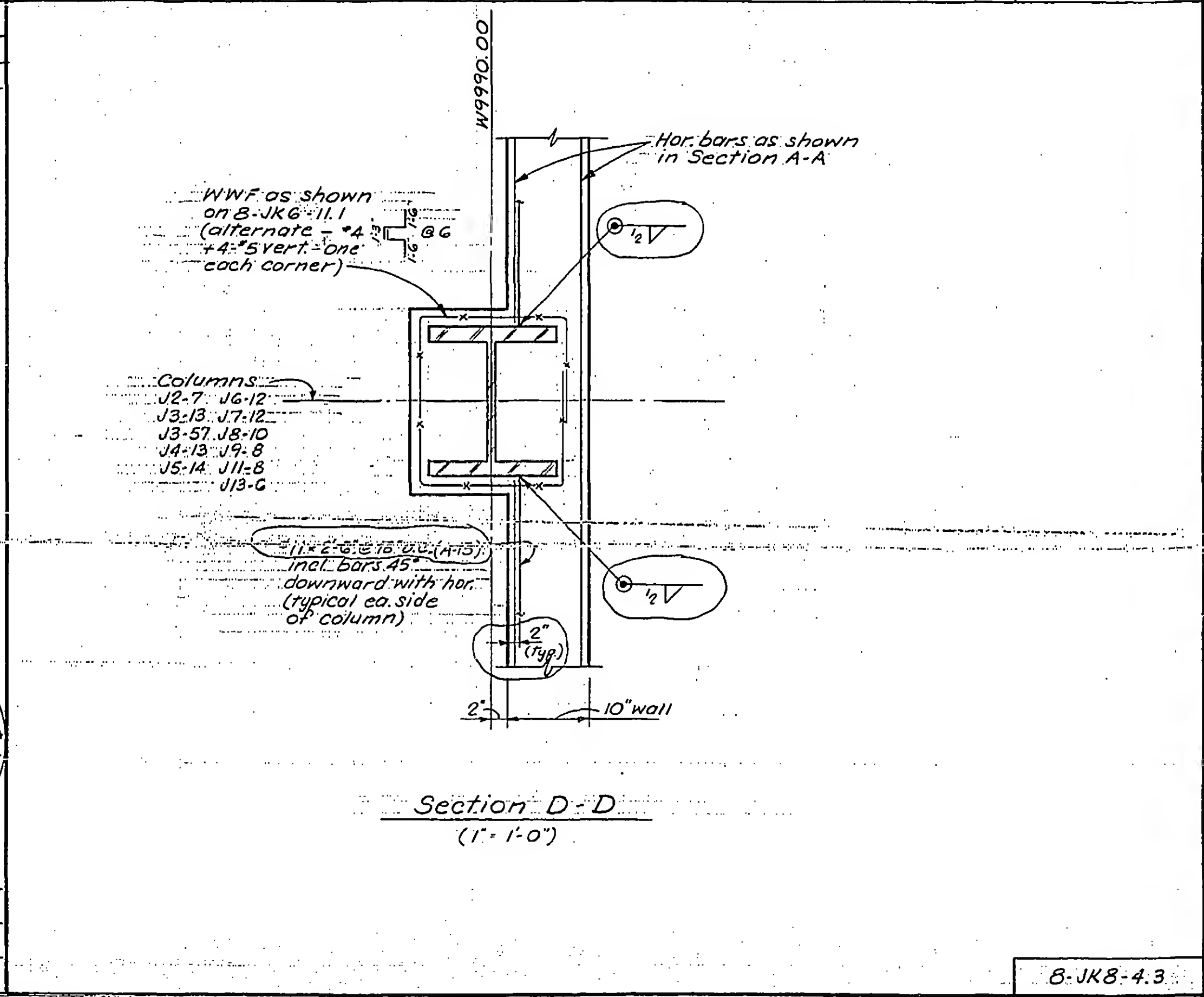
PRAYN

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Fi

8-JK8-4.2

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| <i>7-1-69 GEN. REV.</i> |
| <i>7-23-69</i> |



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| DRAWN S.C. |
| REVIEWED E.L. |

8-JK8-4.3

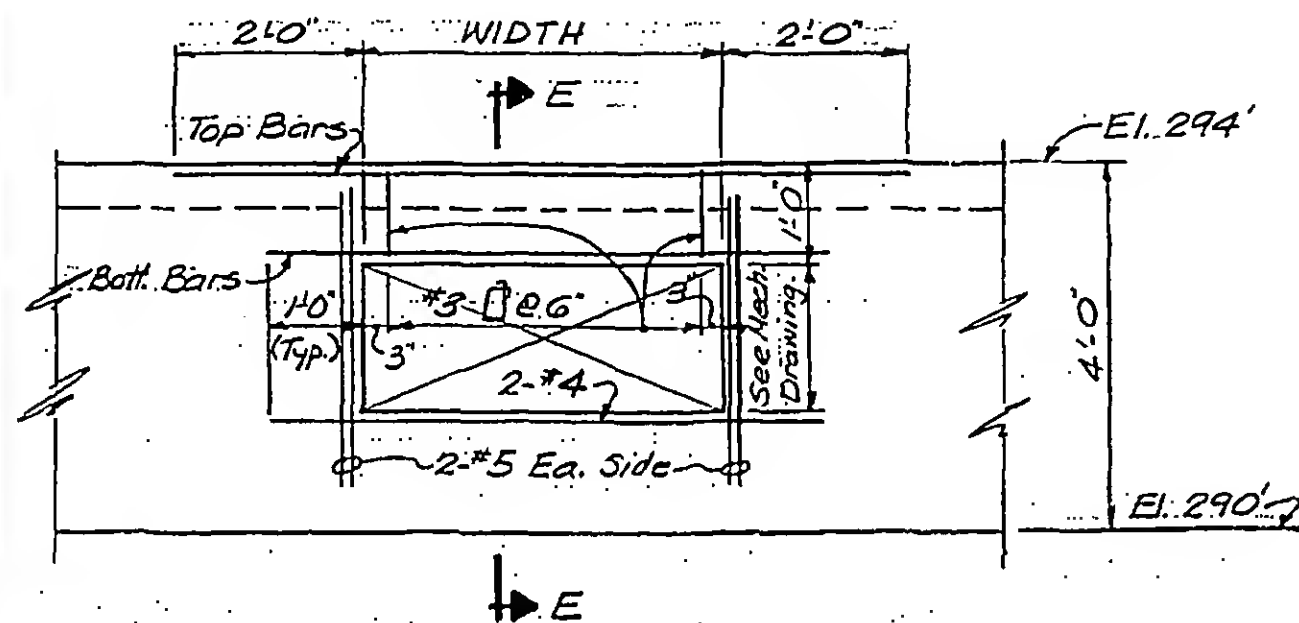
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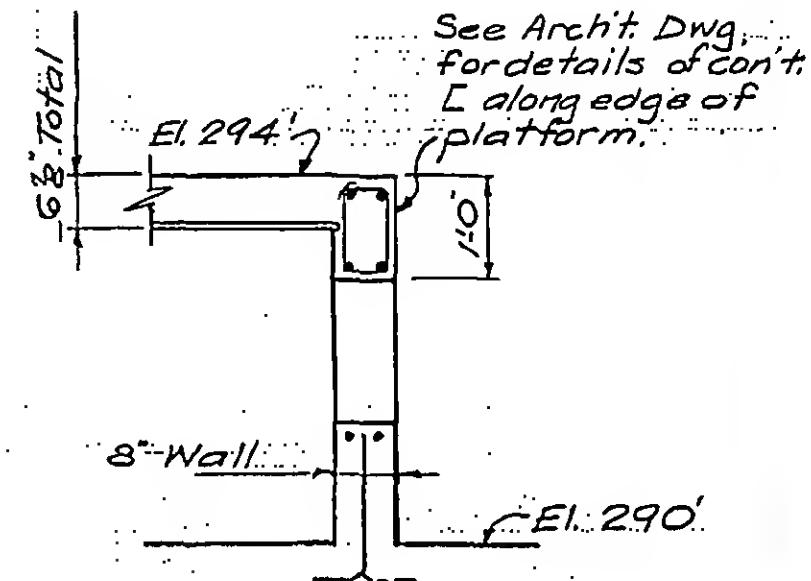
TITLE DETAIL OF OPN'G. THRU 8" WALL UNDER LOADING DOCK

DATE 7-1-69

REVISIONS



Elevation

$$(2 = 1.0)$$


Section E-E

~~1 1/2" - 1 3/4"~~Width of Opn'g.

"Top & Bott. Bars"

4'0" or less

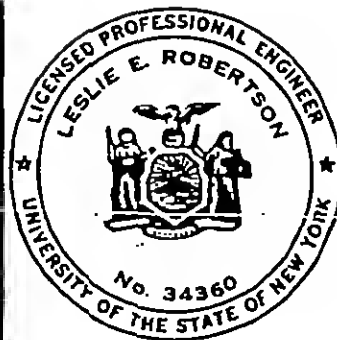
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4:1" to 6:0"

2-45

NOTES:

1. For exact size and location of op'n'gs, see Mech. Dwg's.



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DRAWN

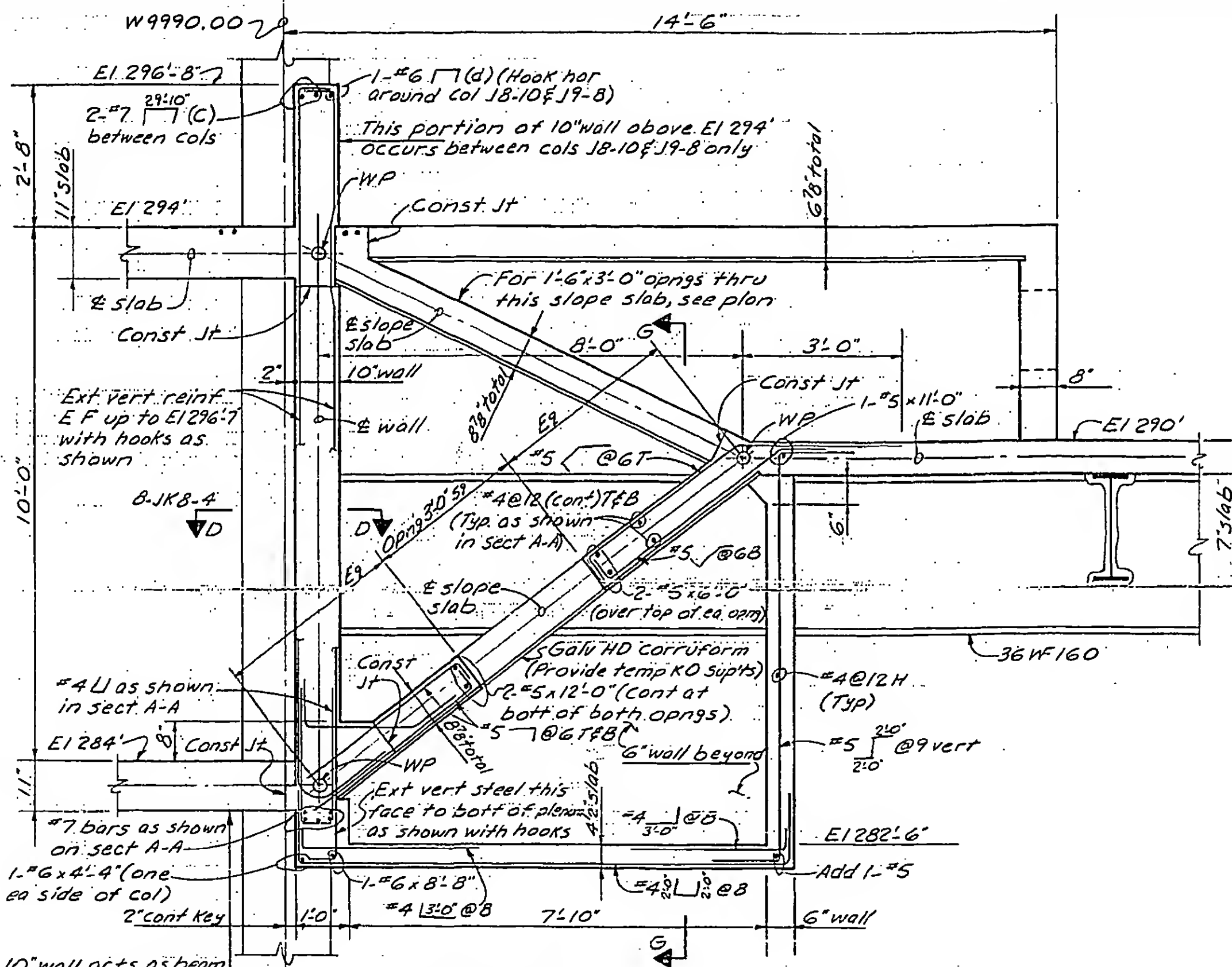
DRAWN
G. Stanton

REVIEWED

E.L.

8-JK8-4.4

REVISIONS



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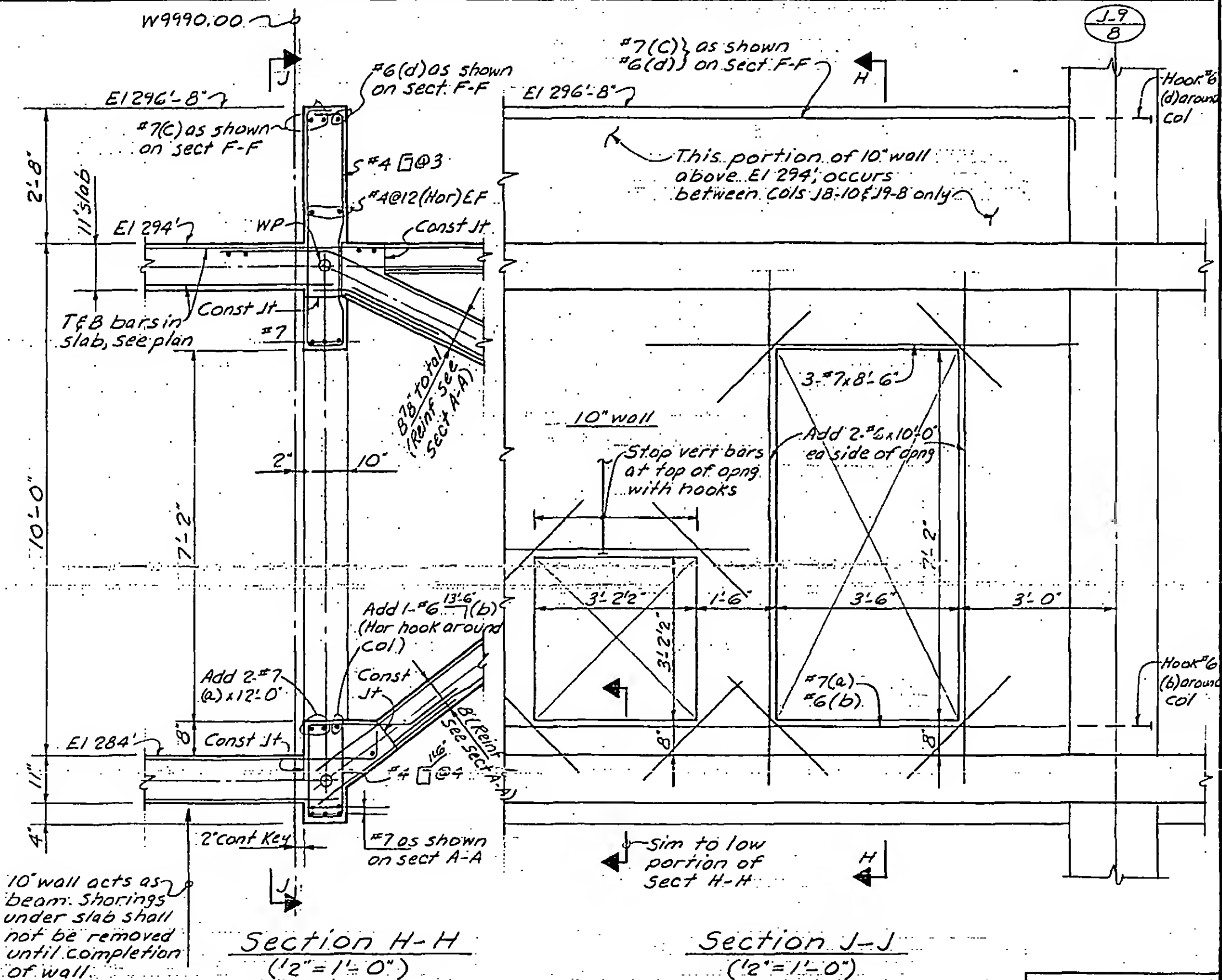
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A. L. FRANQUI

REVIEWED

E. L.

REVISIONS



10" wall acts as beam. Shorings under slab shall not be removed until completion of wall.

Section H-H
(1/2" = 1' - 0")

Section J-J
(12" = 1'-0")

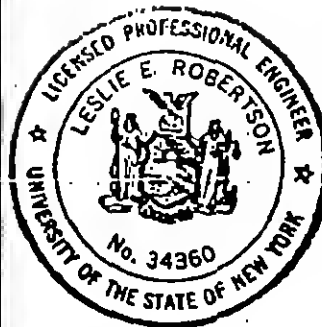
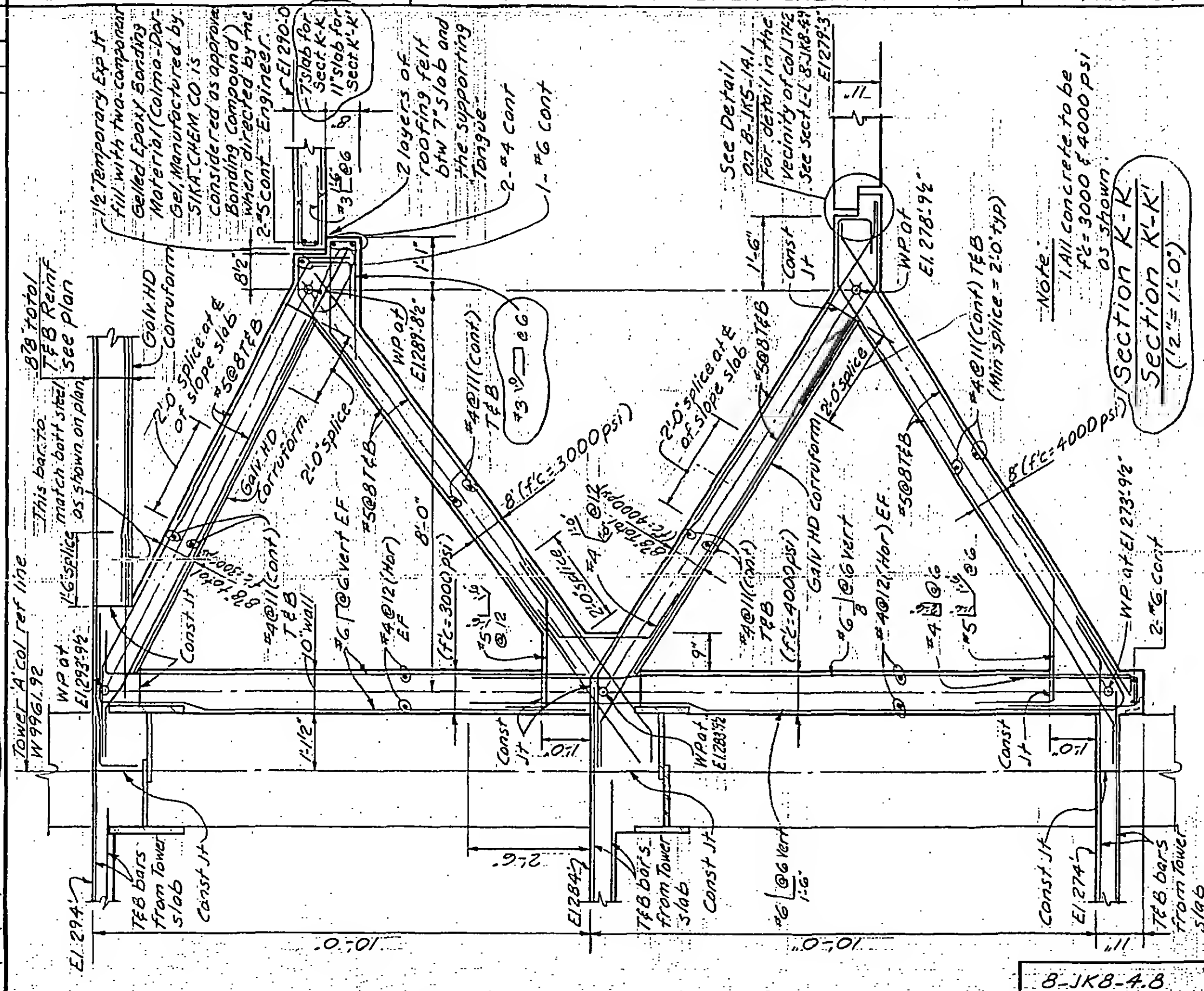
8-JK8-4.7



REVISIONS

8-8-69

9-26-69



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A. L. FRANQUI

REVIEWED
E.L.

8-JK8-4.8

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

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PROJECT THE WORLD TRADE CENTER

TITLE SECTION AT SLOPE SLAB

DATE 7-18-69

REVISIONS

1/2" temporary Exp. JT.
Fill with Epoxy as
described on
8-JK5-14.1

2'-3"

J-71
2

W9950.12

Add #4 e4

Stop reinf. in
slope slabs
as shown
for the 5'-0" length
adjacent column
J-71-2

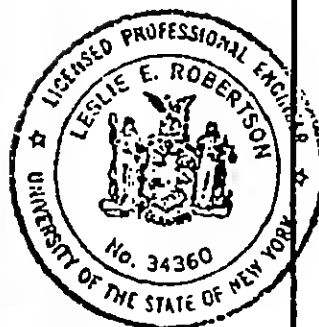
Add 2 #7
x 9'-0"

El. 279'-3"

Column
Shear head11" slab
4" Drop

Section L-L

(1/2" = 1'-0")



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DRAWN

SC.

REVIEWED

E.L.

8-JK8-4.9

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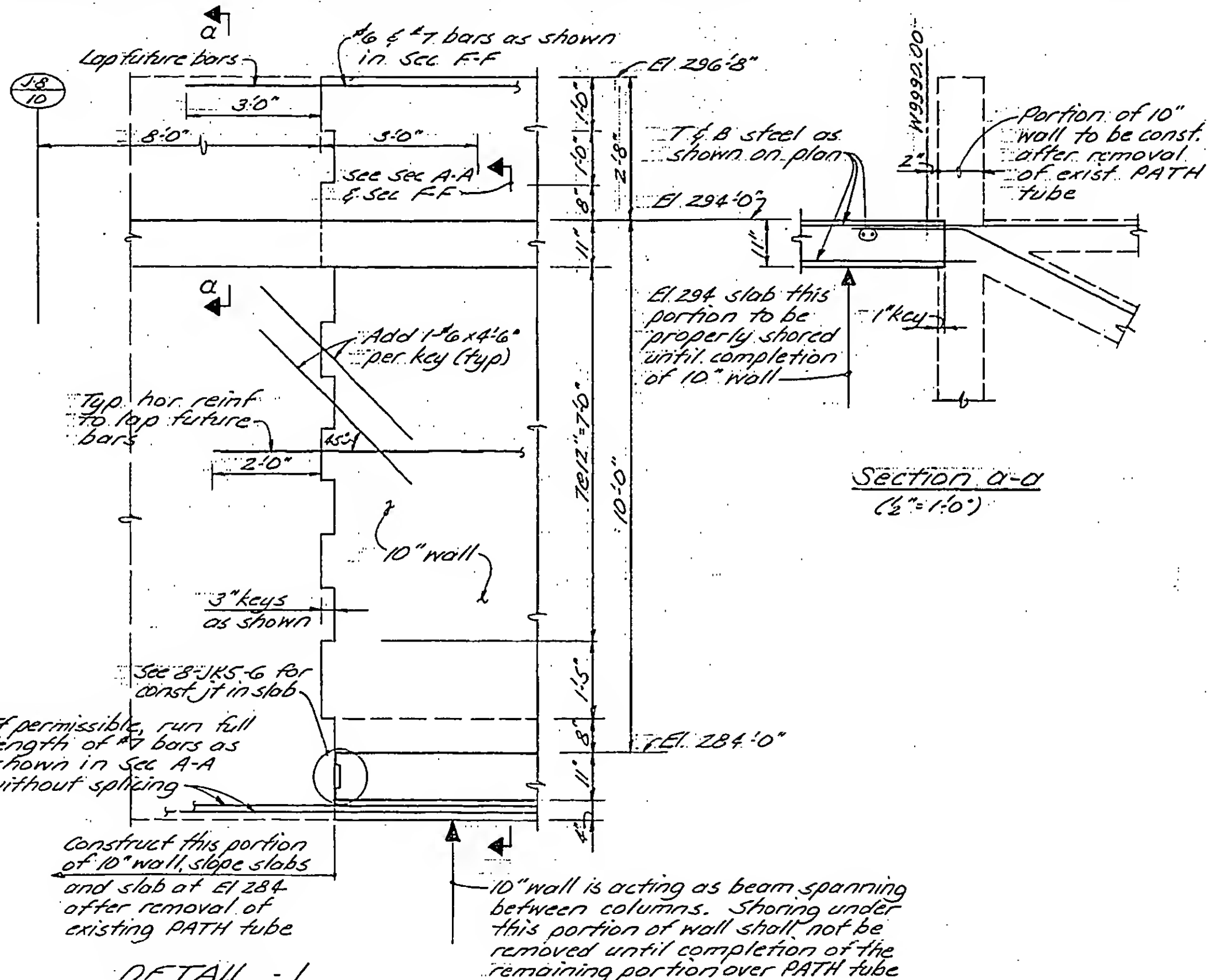
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE SECTION AT SLOPE SLAB

DATE 7-23-69

REVISIONS



DETAIL - 1
 (LOOKING EAST)
 1/2"=1'-0"



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J. AdamsREVIEWED
E.L.

8-JK8-4.10

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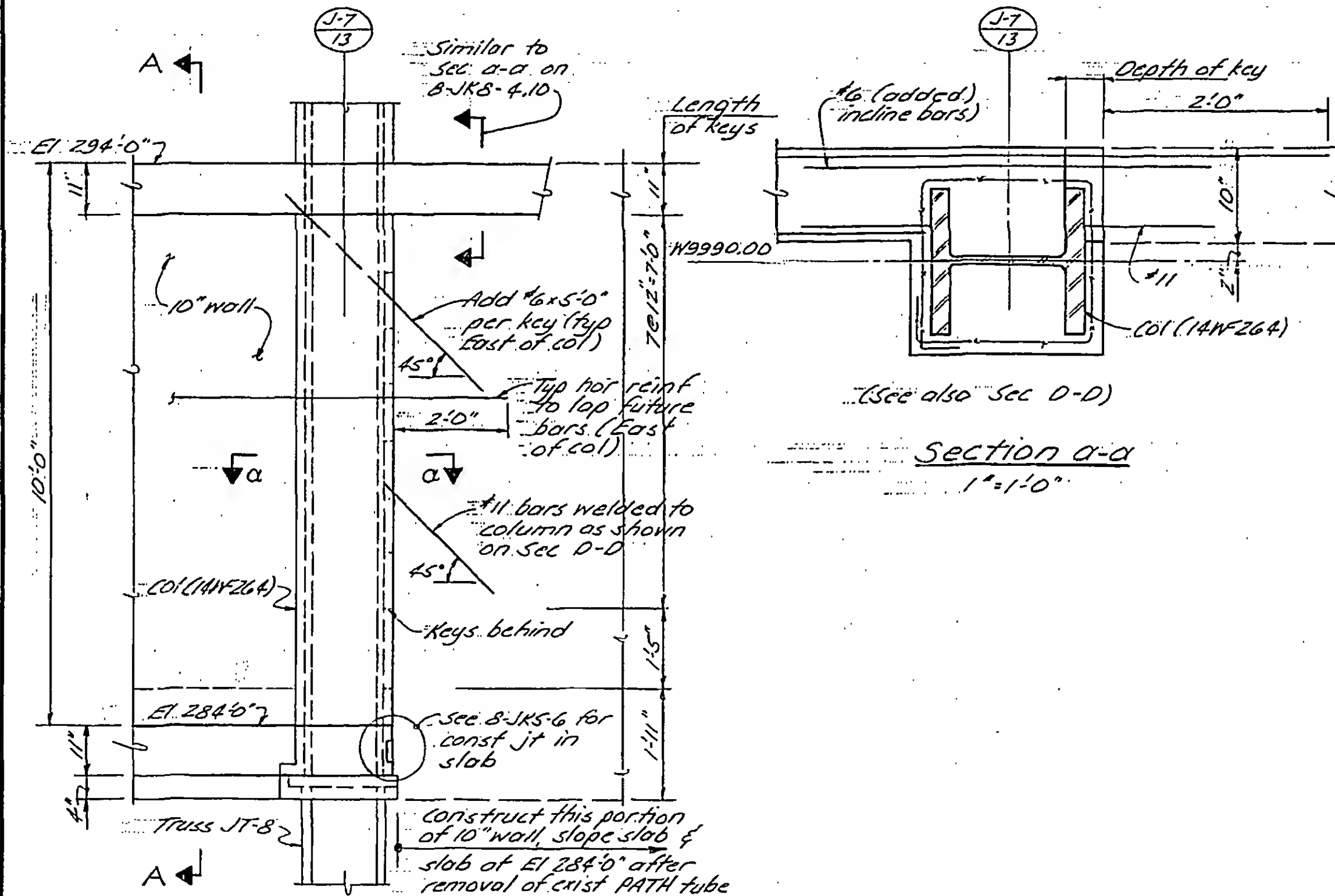
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE SECTION AT SLOPE SLAB

DATE 7-23-69

REVISIONS



DETAIL - 2

(Looking East)

1/2"=1'-0"

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J. Adams

REVIEWED

E.L.

B-JK8-4.11

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

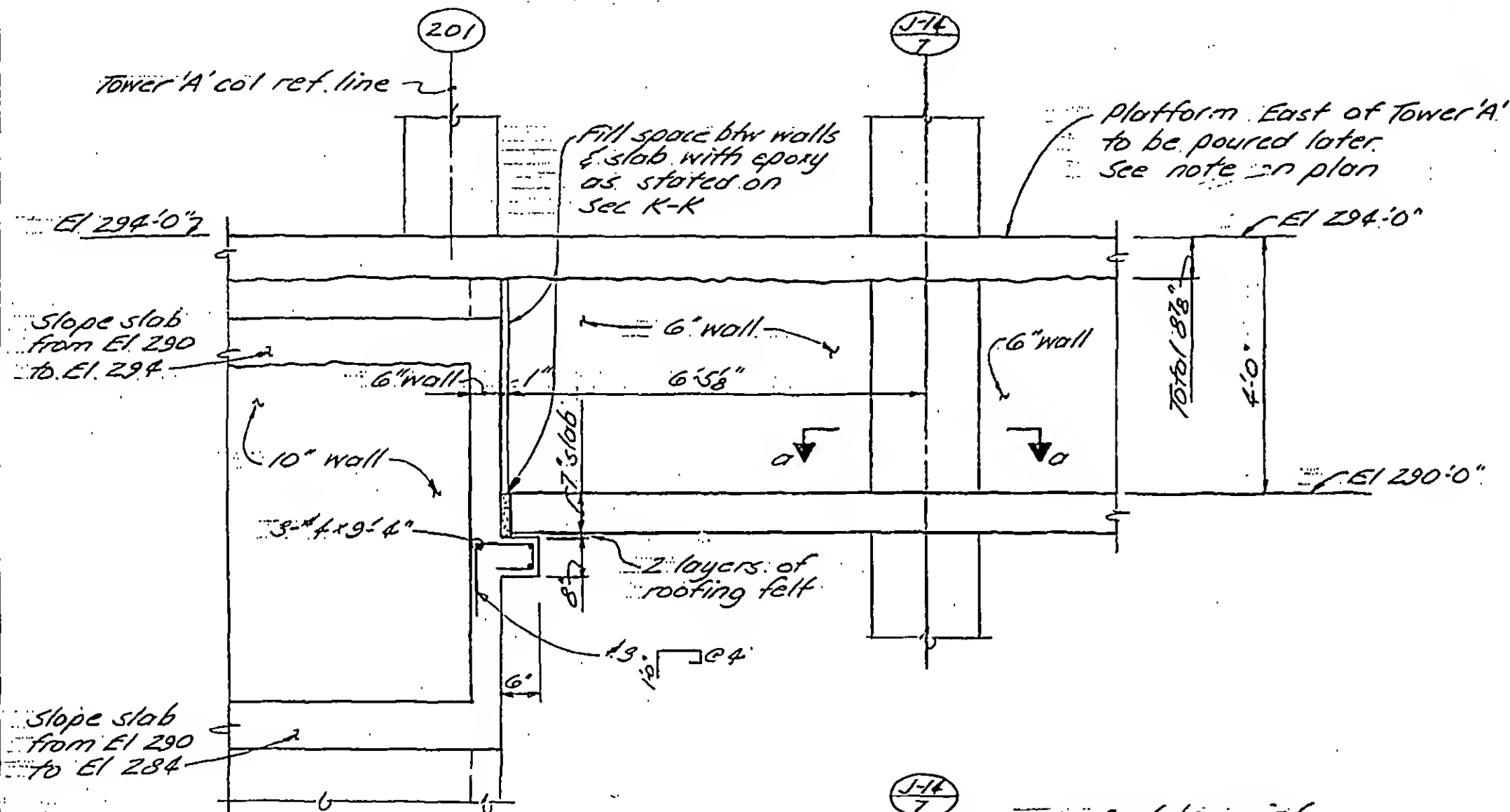
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

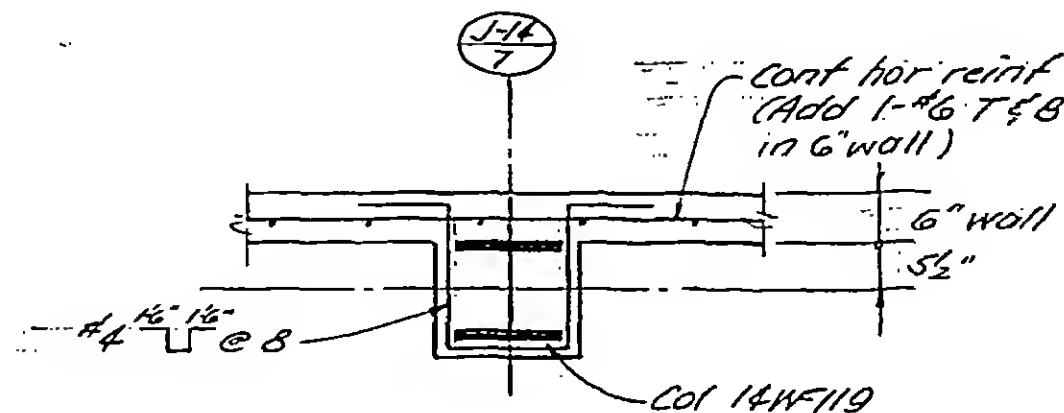
TITLE SECTION AT SLOPE SLAB

DATE 7-23-69

REVISIONS



Section M-M
1/2" = 1'-0"



Section a-a



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J. Adams

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E.L.

8-JKB-4.12

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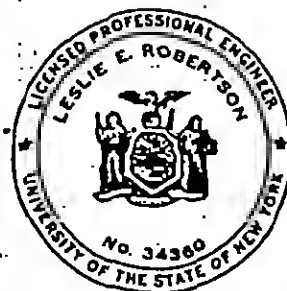
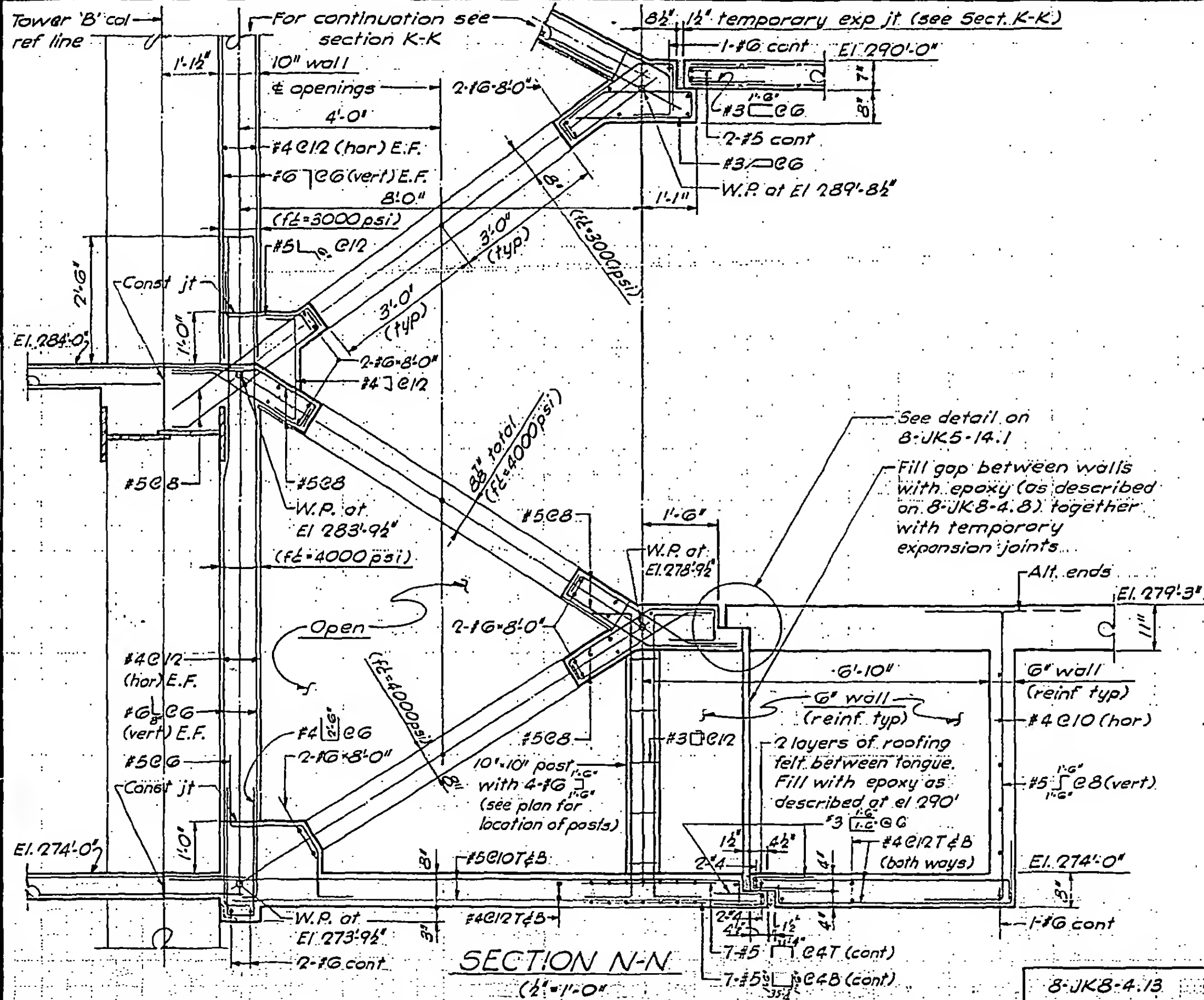
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE SECTION AT SLOPE SLAB

DATE 11-25-69

REVISIONS



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G.K.

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SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

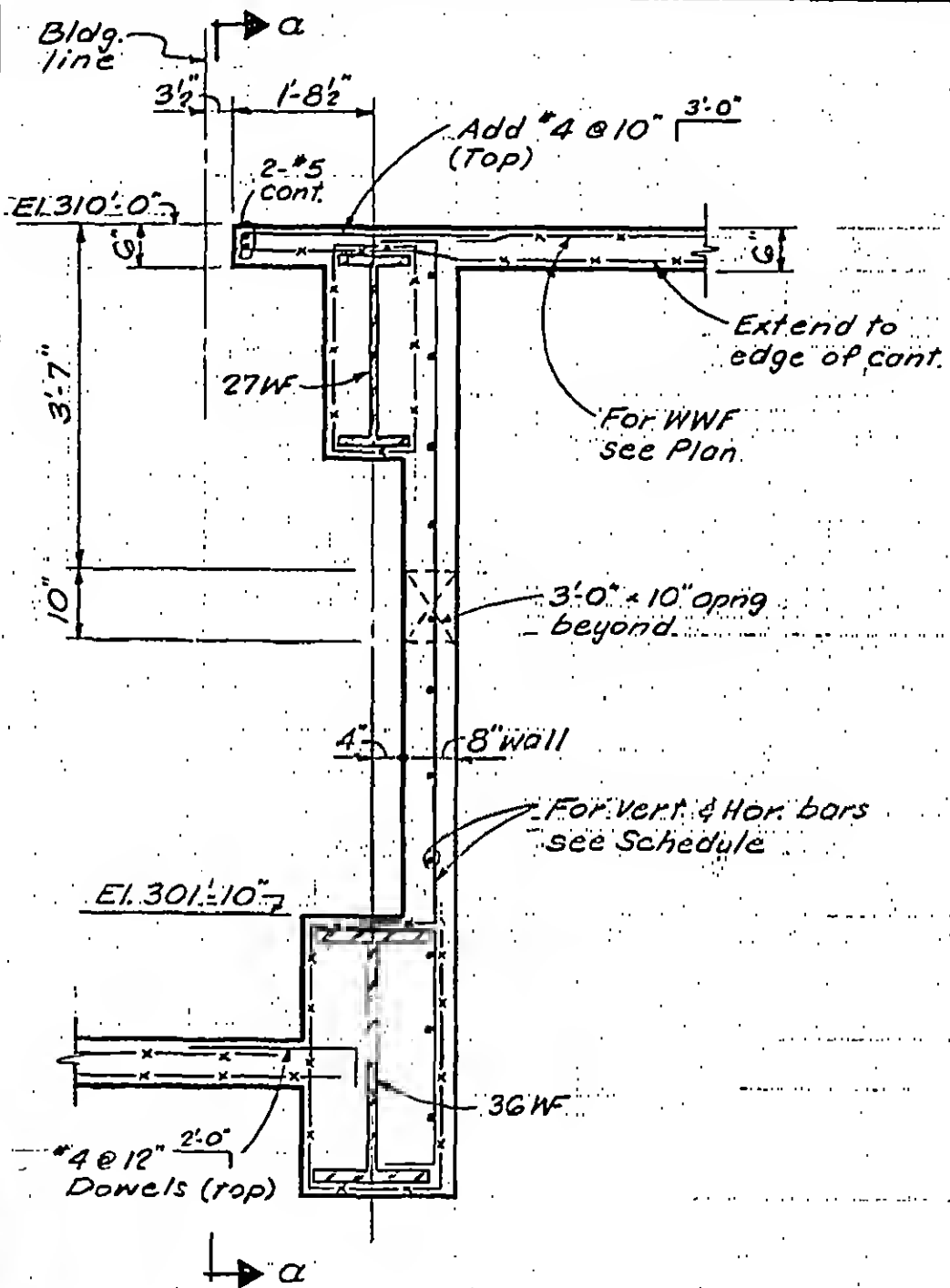
PROJECT THE WORLD TRADE CENTER

TITLE PERIMETER SECTIONS AT EL. 310

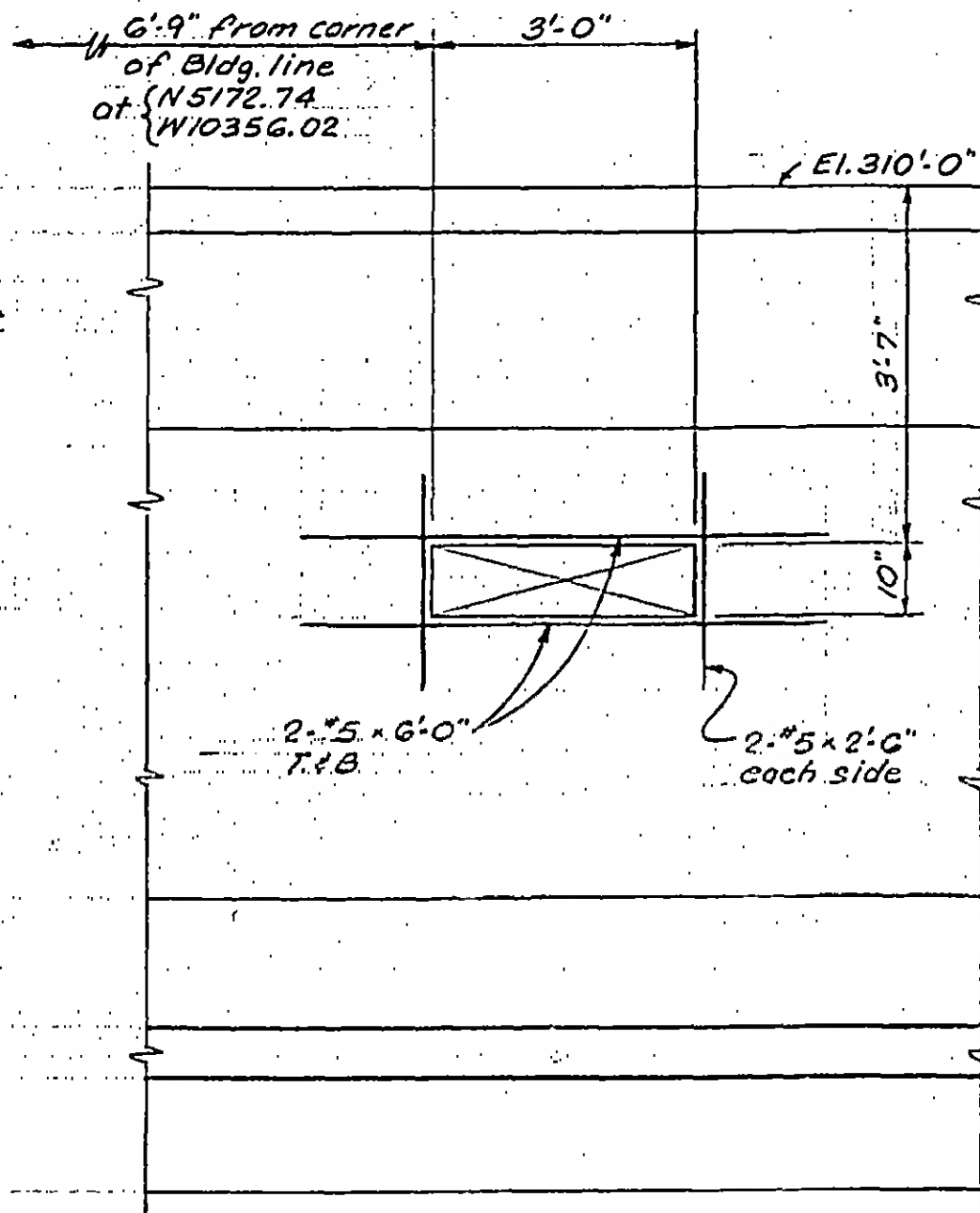
DATE 5-1-68

REVISIONS

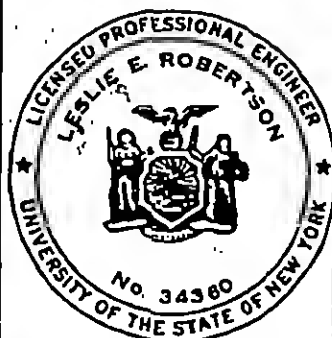
5-12-69 GEN. REV.



Section A-A



Section a-a



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E.L.

B-JK8-5.1

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

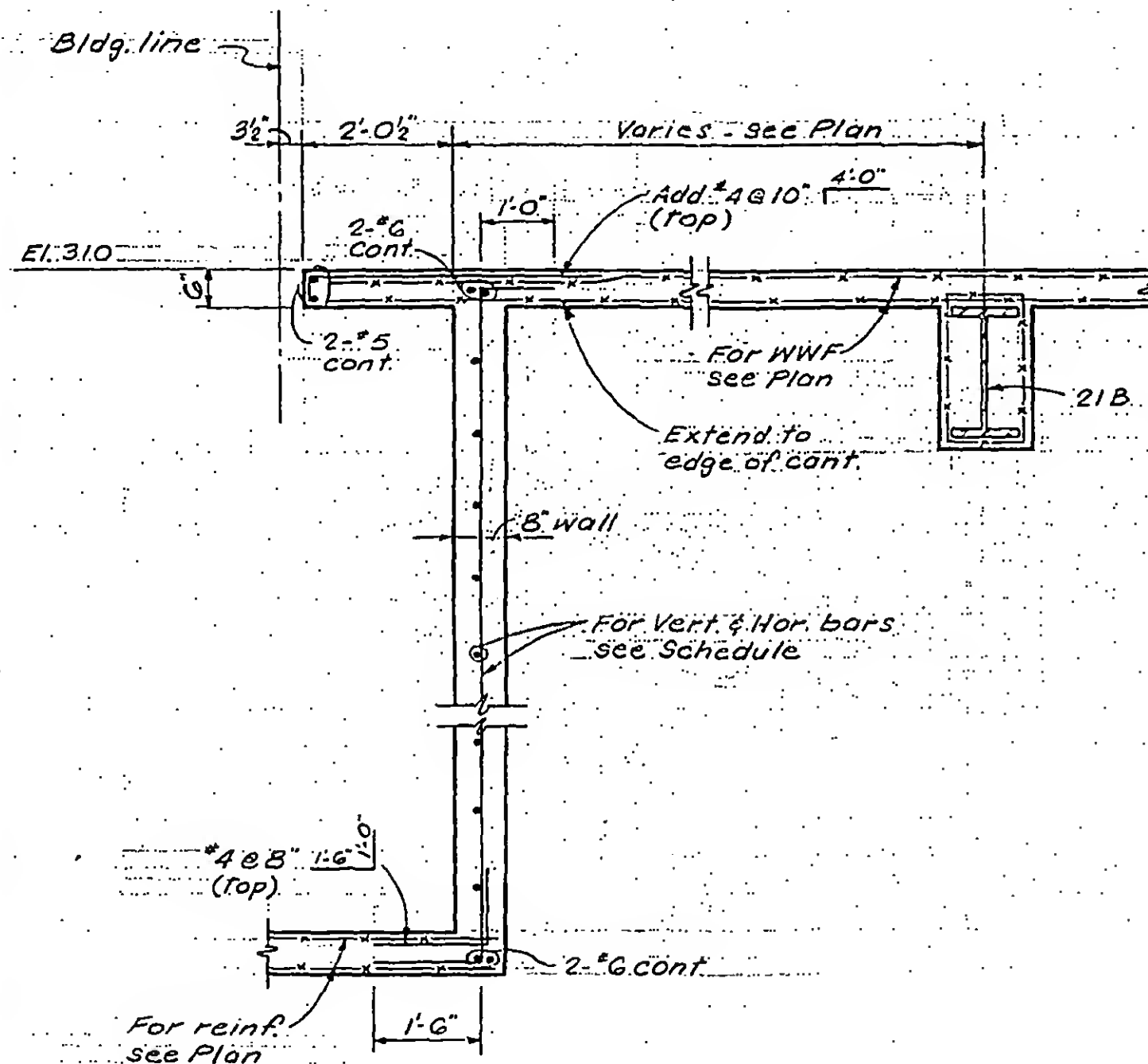
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

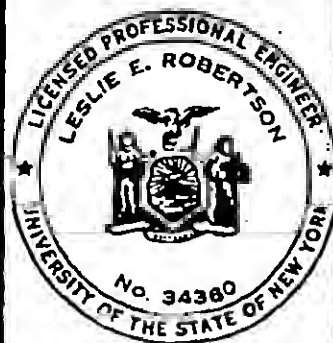
TITLE PERIMETER SECTIONS AT EL. 310

DATE 5-1-68

REVISIONS

5-12-69 GEN.
REV.

Section B-B



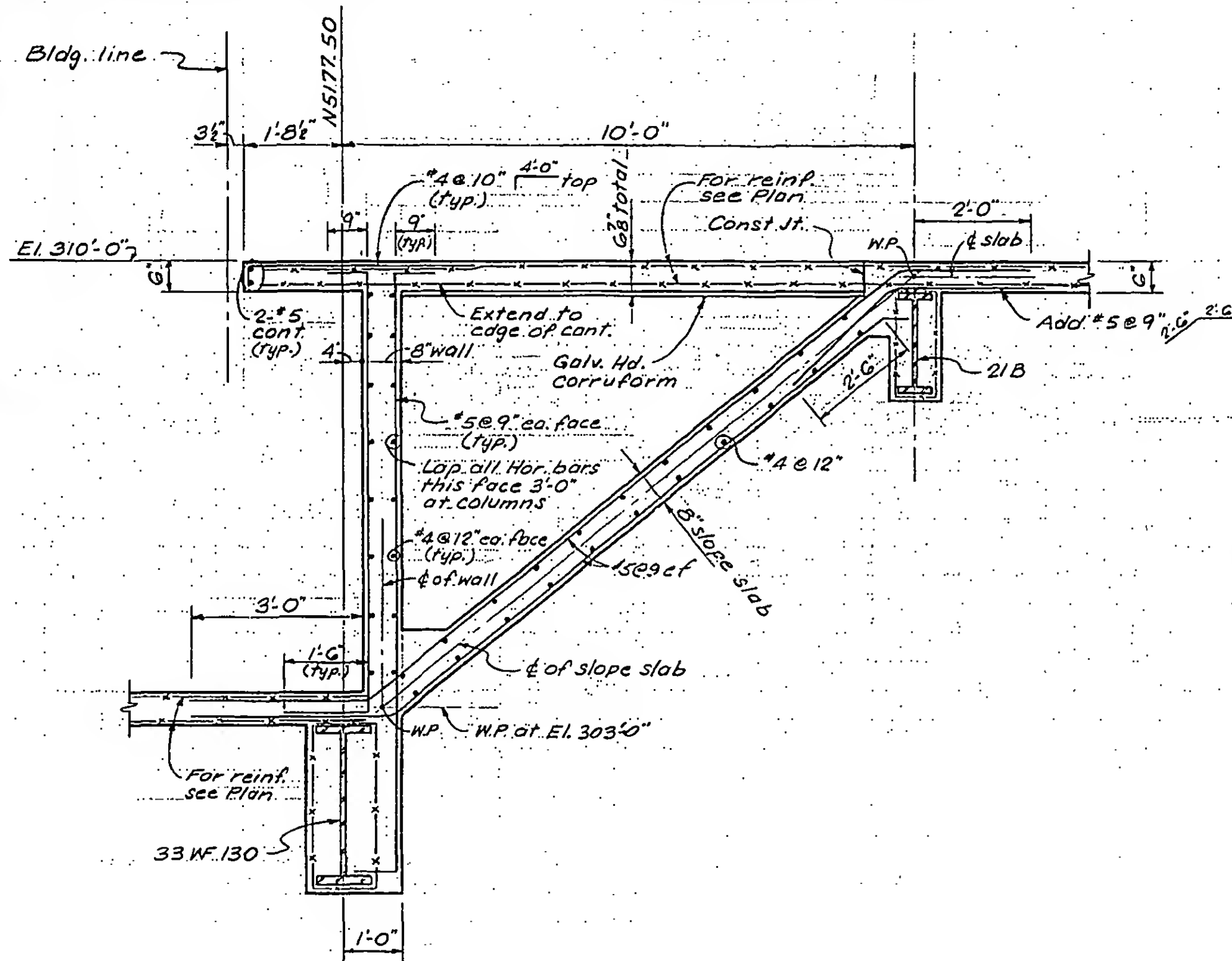
DESIGNED

DRAWN
S.C.REVIEWED
E.L.

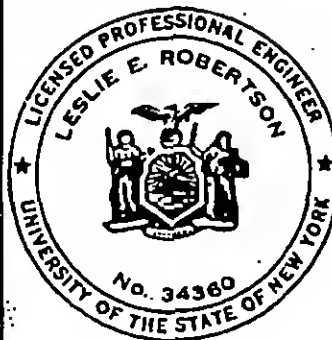
B-JKB-5.2

REVISIONS

5-12-69 GEN.
REV.



Section C-C



DESIGNED

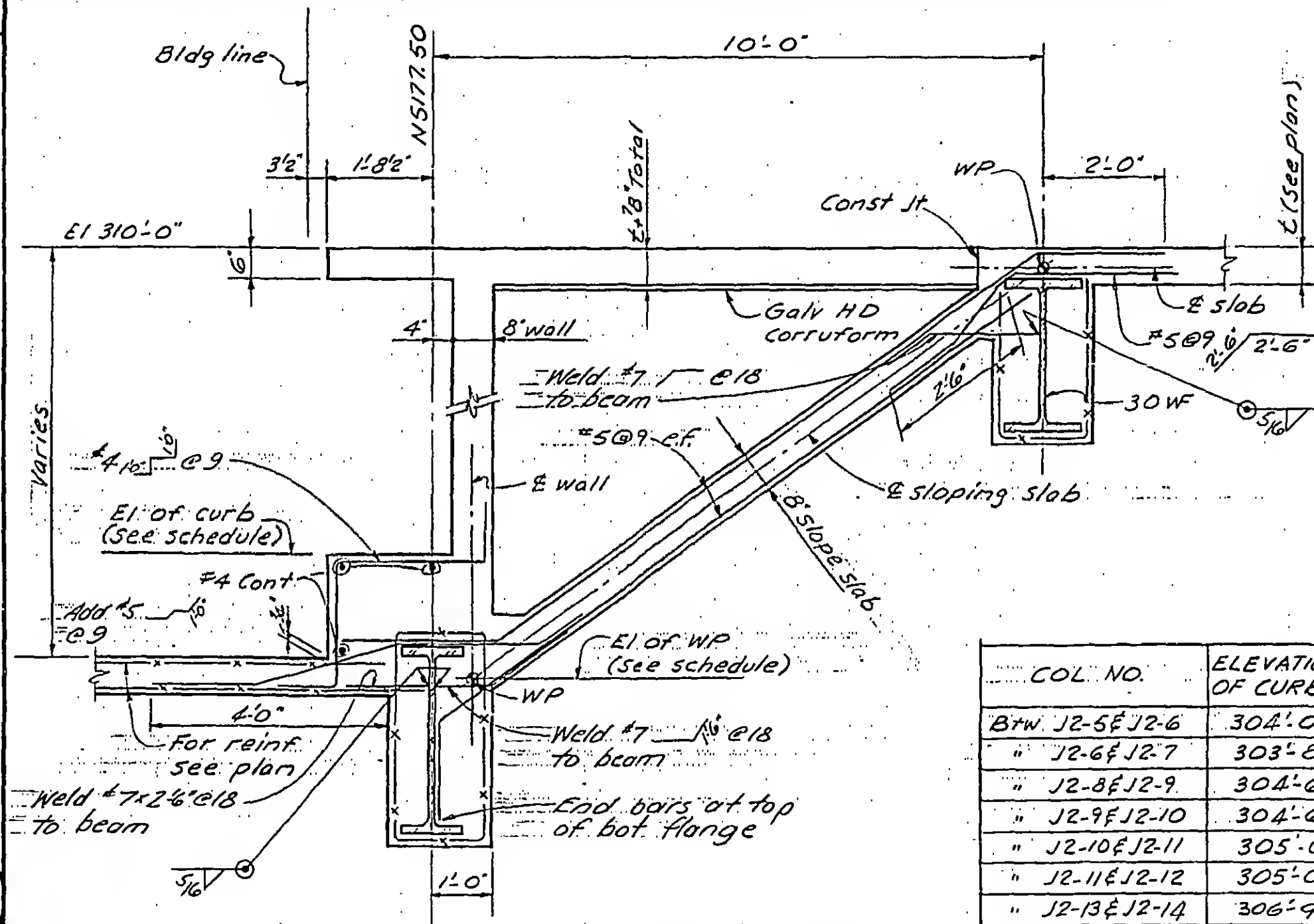
DRAWN
S.C.

REVIEWED
E.L.

8-JK8-5.3

REVISIONS

5-12-69 GEN.
REV.

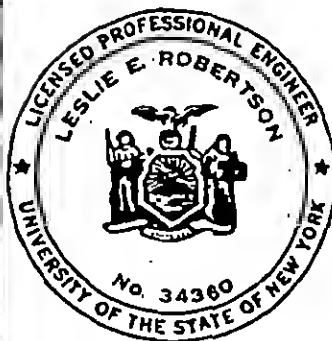


Section D-D

Note:

For remaining reinf details See Section C-C.

| COL. NO. | ELEVATION OF CURB | ELEVATION OF WP. |
|-----------------|----------------------|---------------------|
| B+W J2-5 & J2-6 | 304'-0" | 303'-0" |
| " J2-6 & J2-7 | 303'-8" | 303'-0" |
| " J2-8 & J2-9 | 304'-6" | 303'-6" |
| " J2-9 & J2-10 | 304'-6" | 303'-6" |
| " J2-10 & J2-11 | 305'-0" | 303'-6" |
| " J2-11 & J2-12 | 305'-0" | 303'-6" |
| " J2-13 & J2-14 | 306'-9" | 304'-7" |
| " J2-14 & J2-15 | 307'-0" | 304'-7" |



DESIGNED

DRAWN
A.F.

REVIEWER

E.L.

8-1K8-5.4

Structural & Civil Engineers

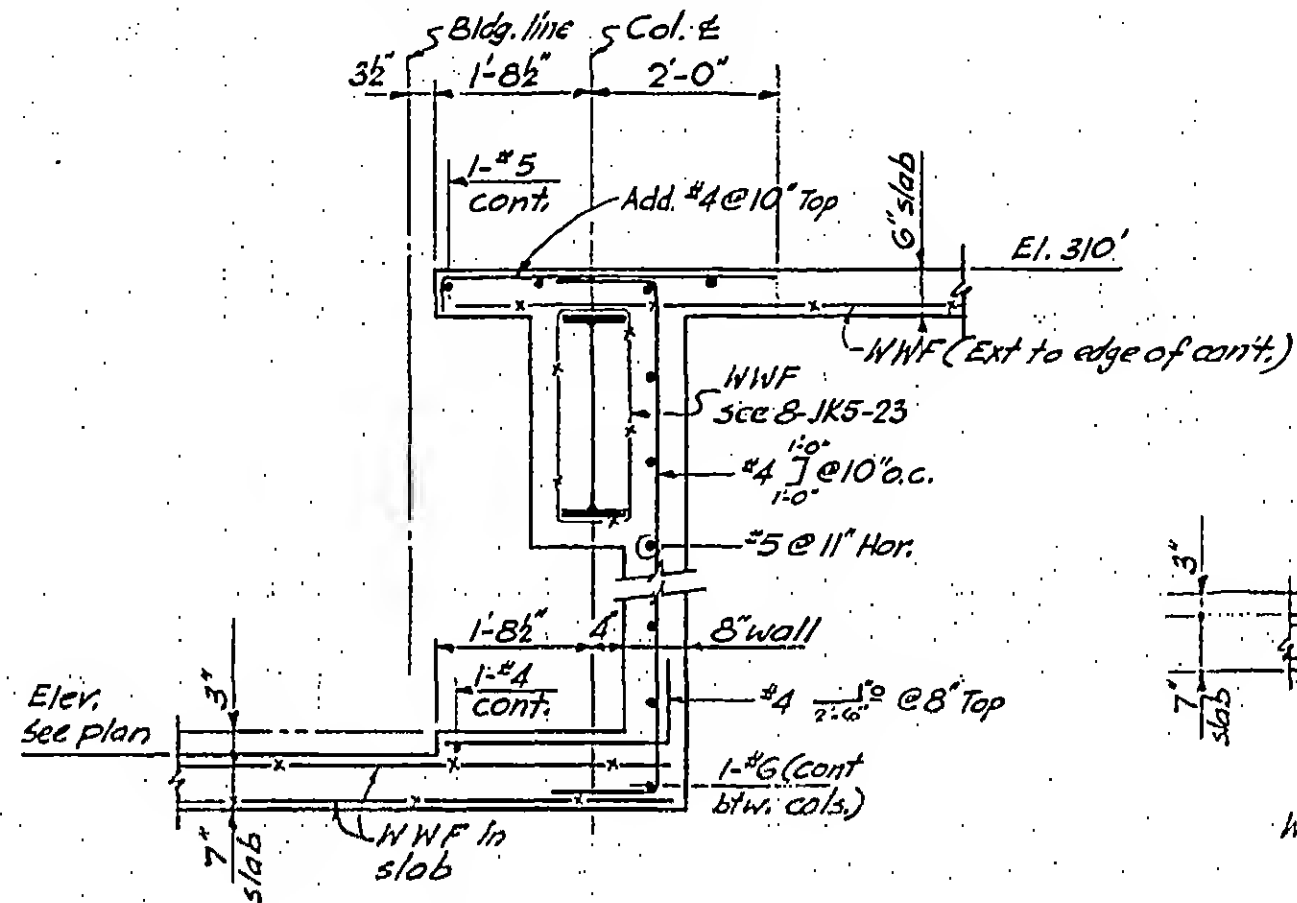
PROJECT *THE WORLD TRADE CENTER*

| TITLE | SECTIONS |
|---------------------------|---------------------------|
| 1. General Information | 1.1. Name of the Project |
| 2. Objectives and Scope | 2.1. Purpose of the Study |
| 3. Methodology | 3.1. Research Design |
| 4. Results and Discussion | 4.1. Data Collection |
| 5. Conclusion | 5.1. Summary of Findings |
| 6. References | 6.1. Literature Review |
| 7. Appendix | 7.1. Additional Data |
| 8. Glossary | 8.1. Key Terms |
| 9. Bibliography | 9.1. Sources |
| 10. Index | 10.1. Subject Index |

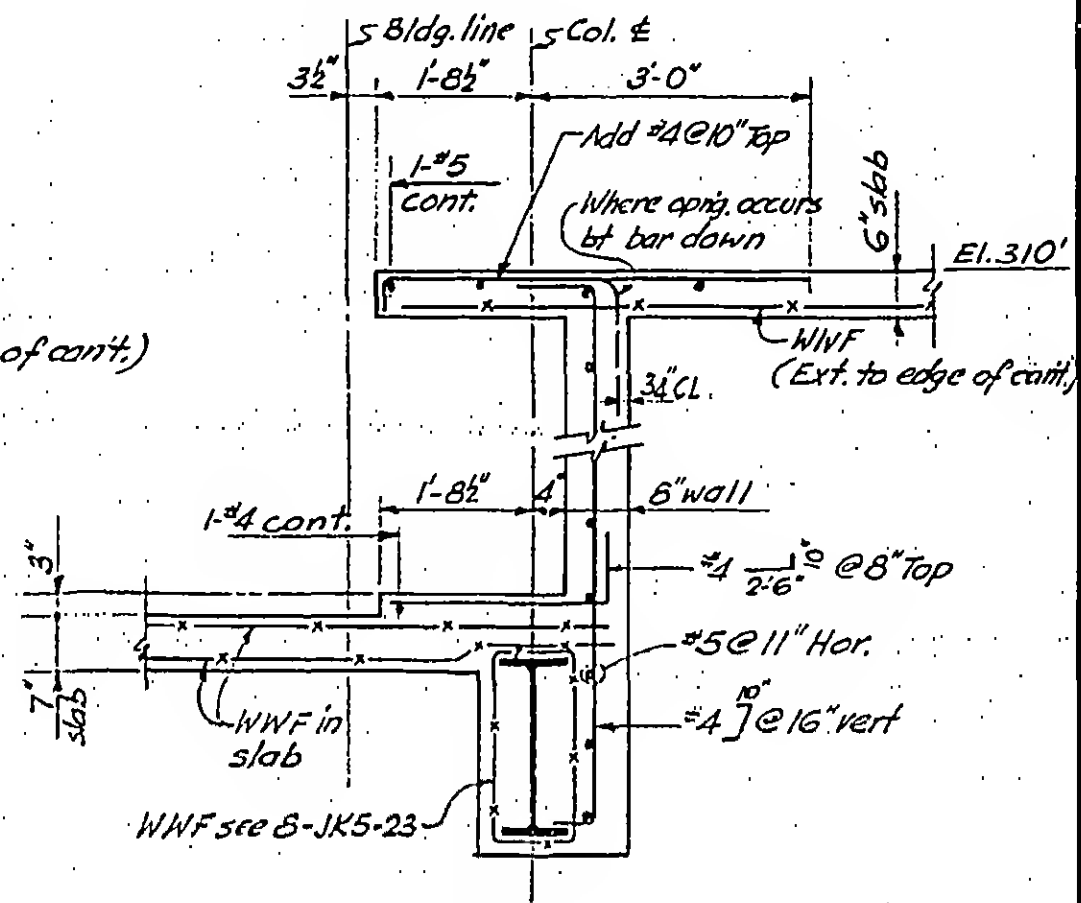
DATE 5-1-68

REVISIONS

10-21-68



SECTION H-H
(1/2" = 1'-0").



SECTION J-J
($\frac{1}{2}'' = 1'-0''$)



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DRAWN

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8-JK8-5.5

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

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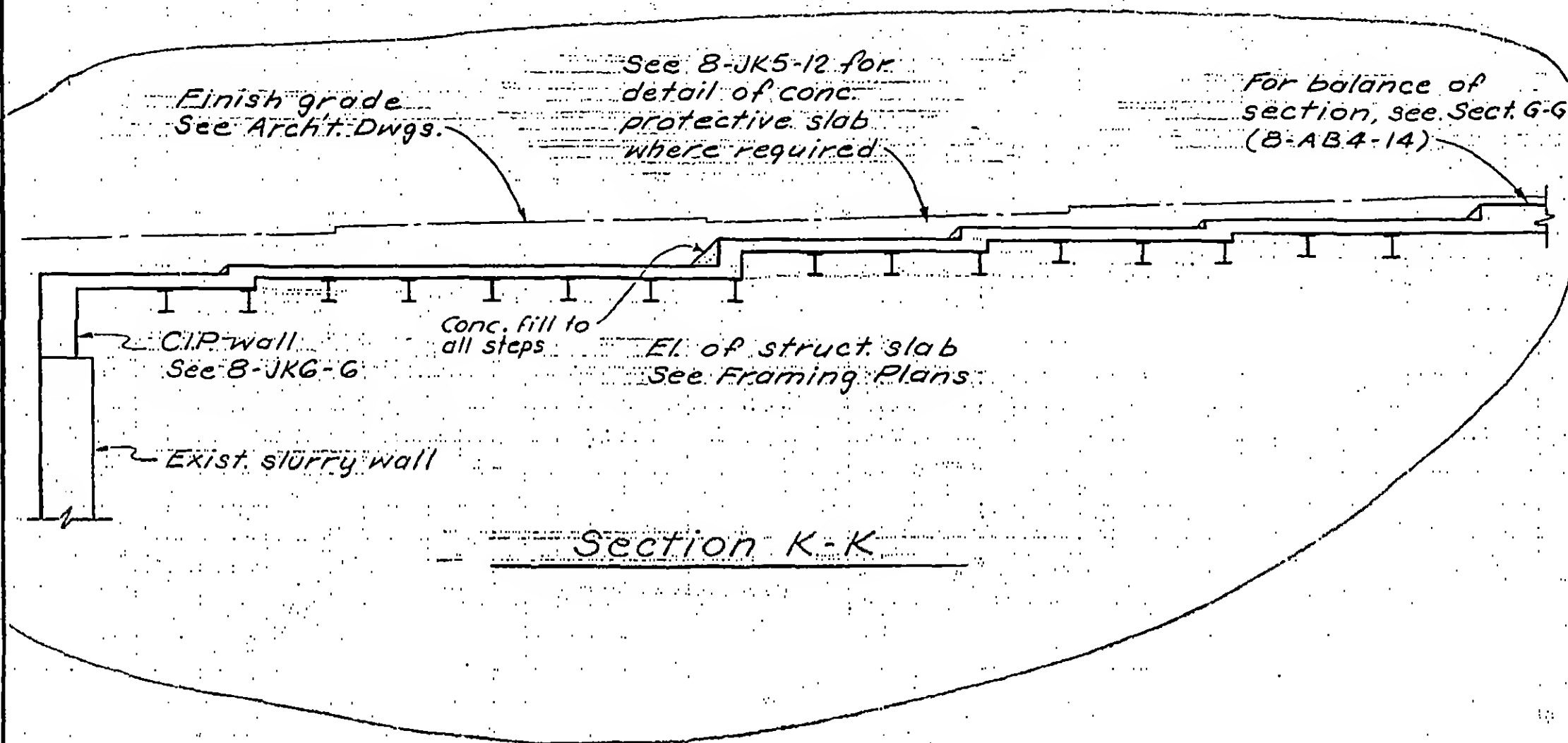
PROJECT THE WORLD TRADE CENTER

TITLE PERIMETER SECTIONS - EL. 310

DATE 5-1-68

REVISIONS

10-21-68



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REVIEWED

8-JK8-5.6

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

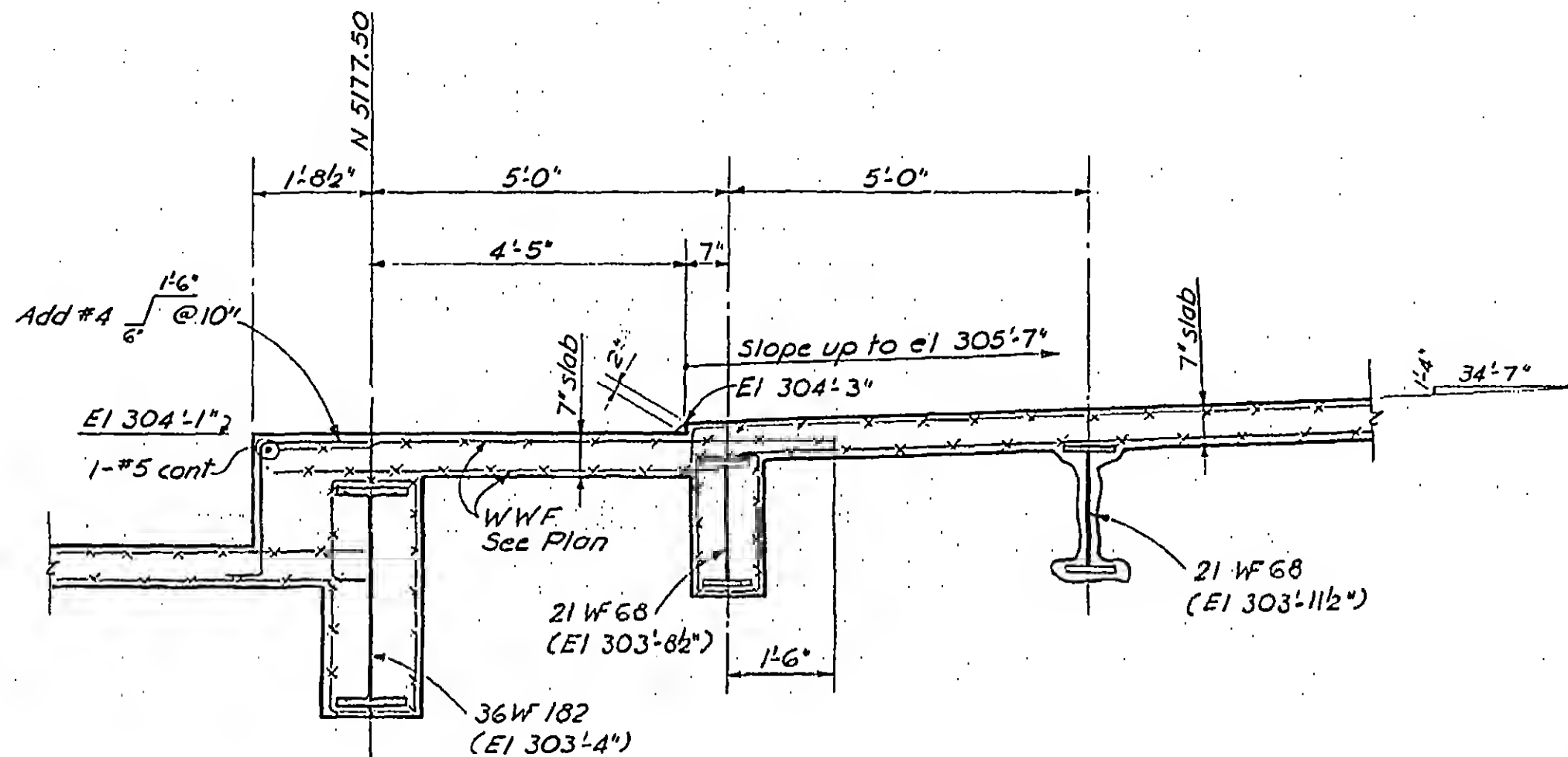
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

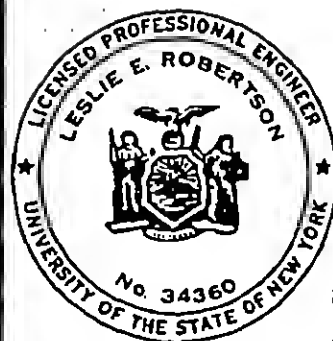
TITLE PERIMETER SECTION AT EL 310'-0"

DATE 5-1-68

REVISIONS

5-12-69 GEN.
REV.

Section L-L



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E. Smith

REVIEWED

E.L.

8-JK8-5.7

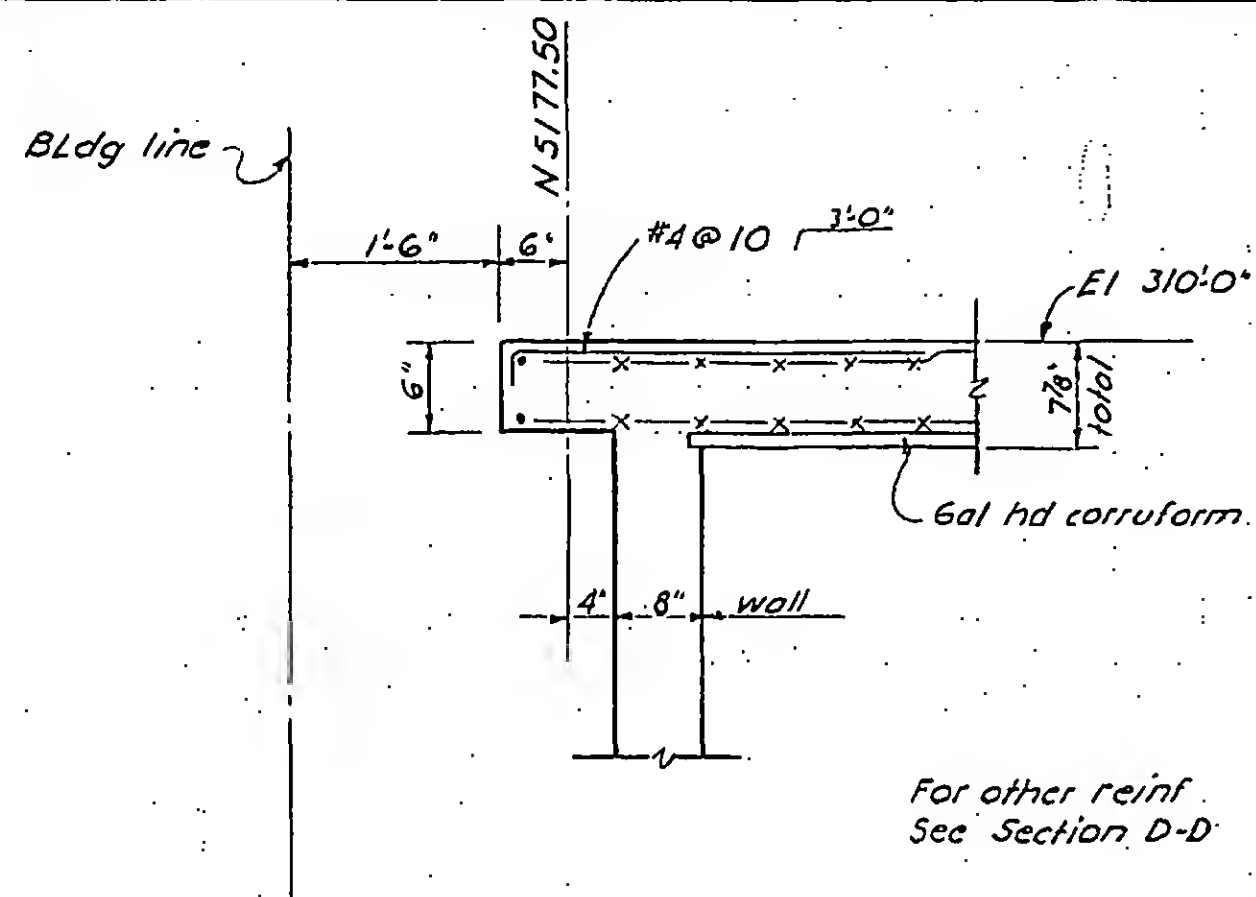
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

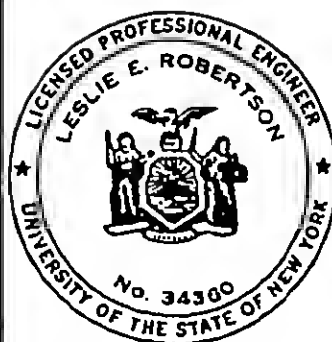
TITLE PERIMETER SECTION AT EL 310'-0"

DATE 5-12-69

REVISIONS



Section M-M



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F. Smith

REVISED

E.L

$$8 - JK8 = 5.8$$

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

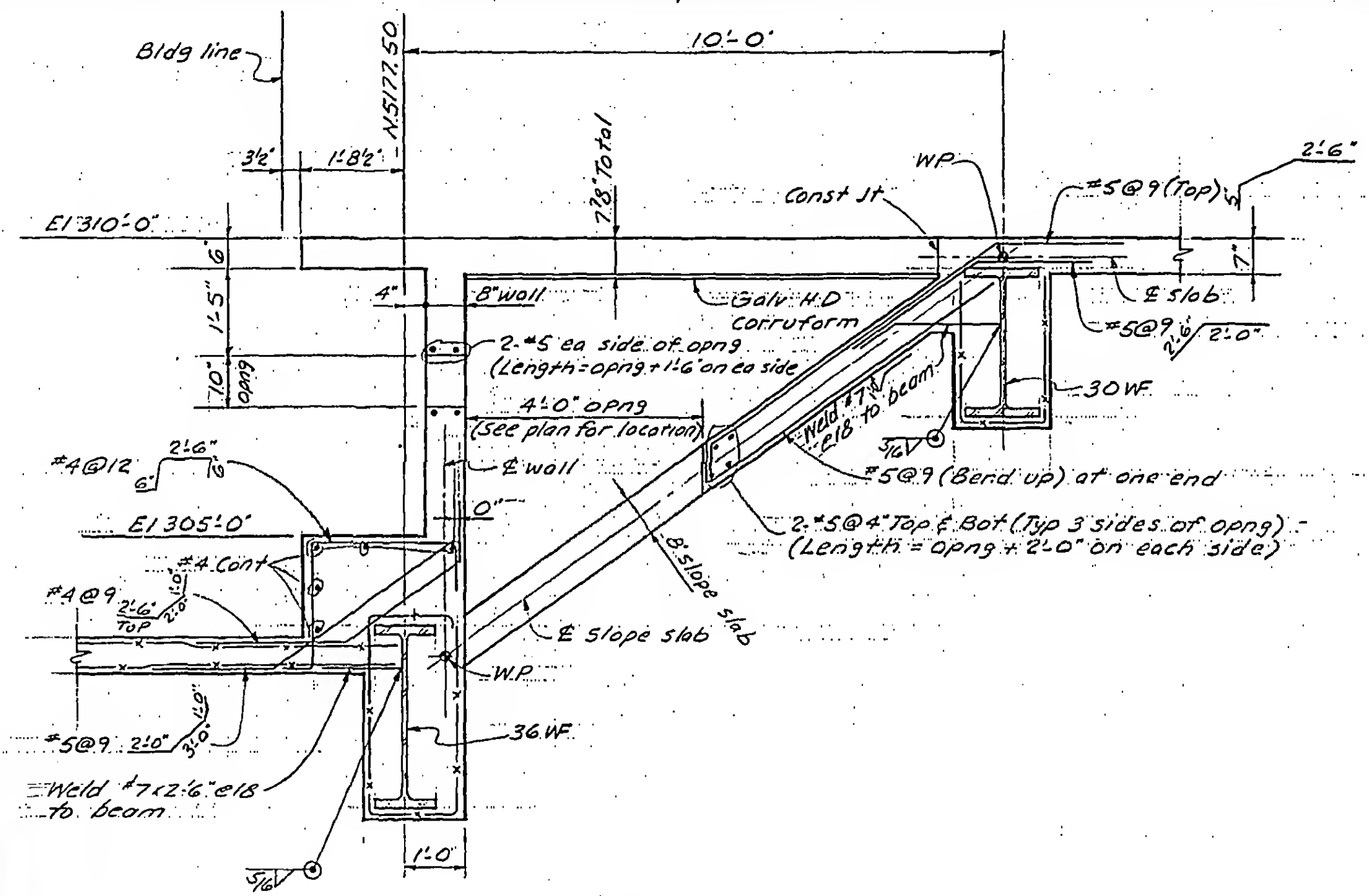
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE PERIMETER SECTIONS AT EL 310'-0"

DATE 5-12-69

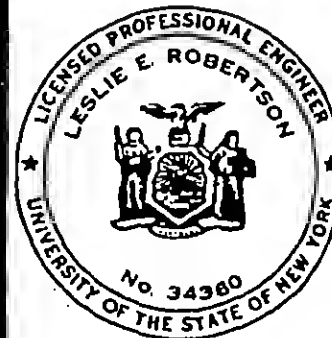
REVISIONS



Section N-N

Note.

For remaining reinf details see Section O-O.



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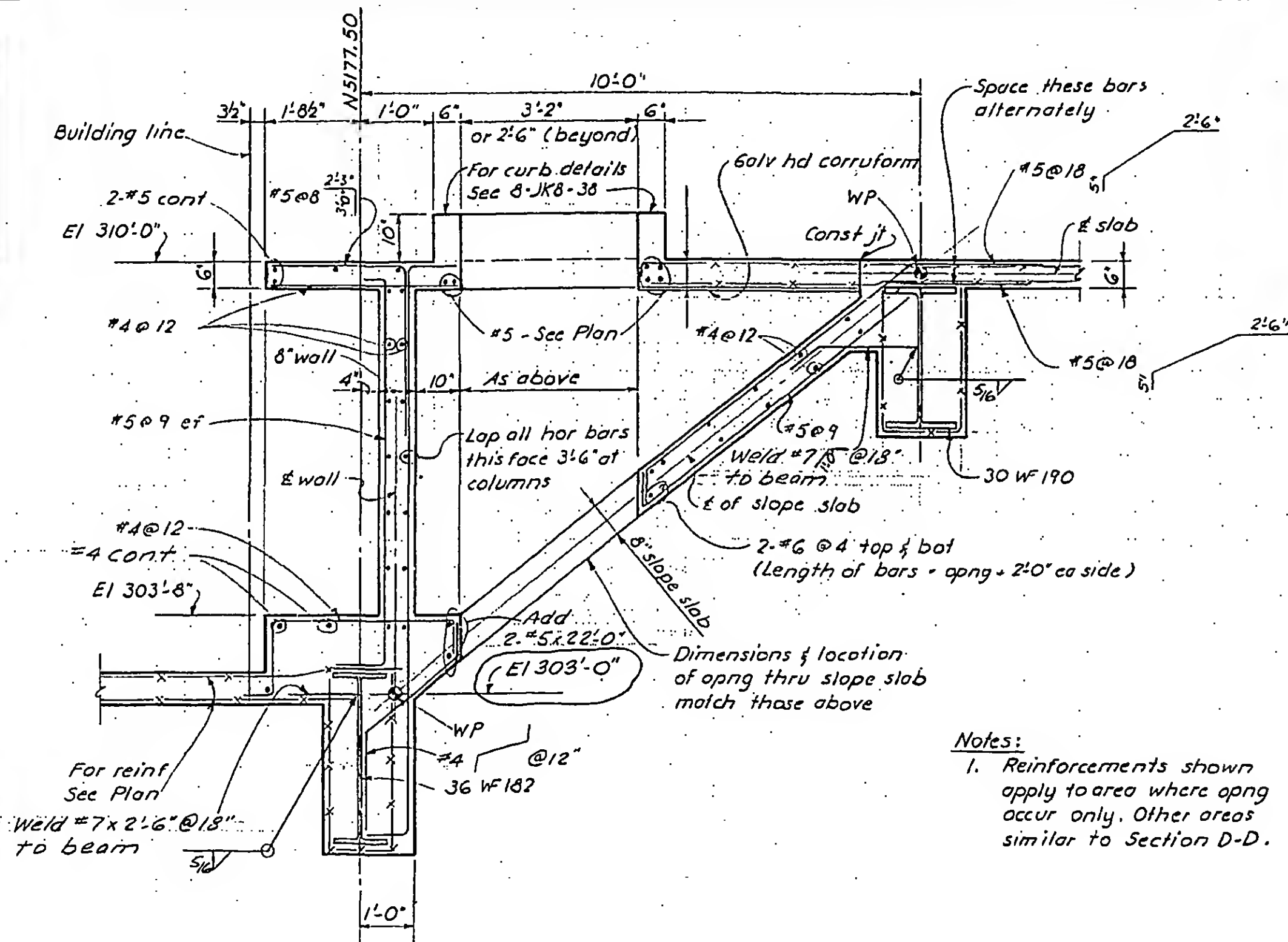
DRAWN A.F.

REVIEWED E.L.

B-JKB-5.9

REVISIONS

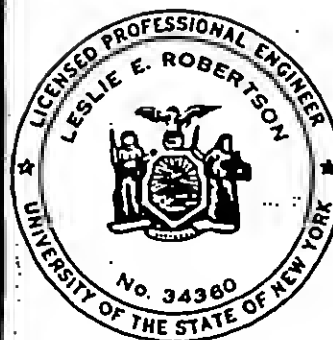
7-16-69



Section P-P

Notes:

1. Reinforcements shown apply to area where opng occur only. Other areas similar to Section D-D.



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Smith

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E.L.

8 = JK 8 - 5.10

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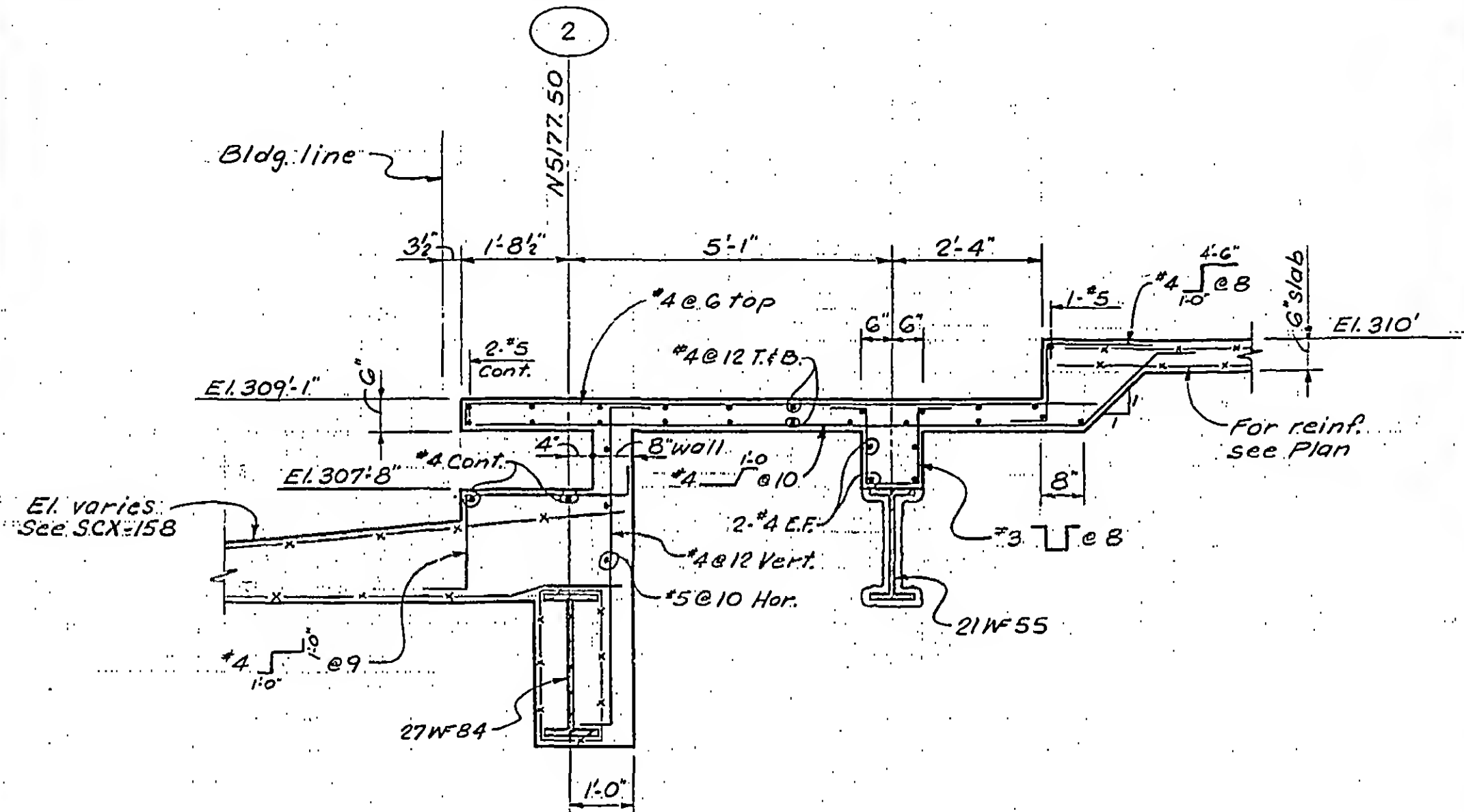
Structural & Civil Engineers

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TITLE PERIMETER SECTIONS AT EL. 310'-0"

DATE 6-11-69

REVISIONS



Section Q-Q
(1/2" = 1'-0")



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E.L.

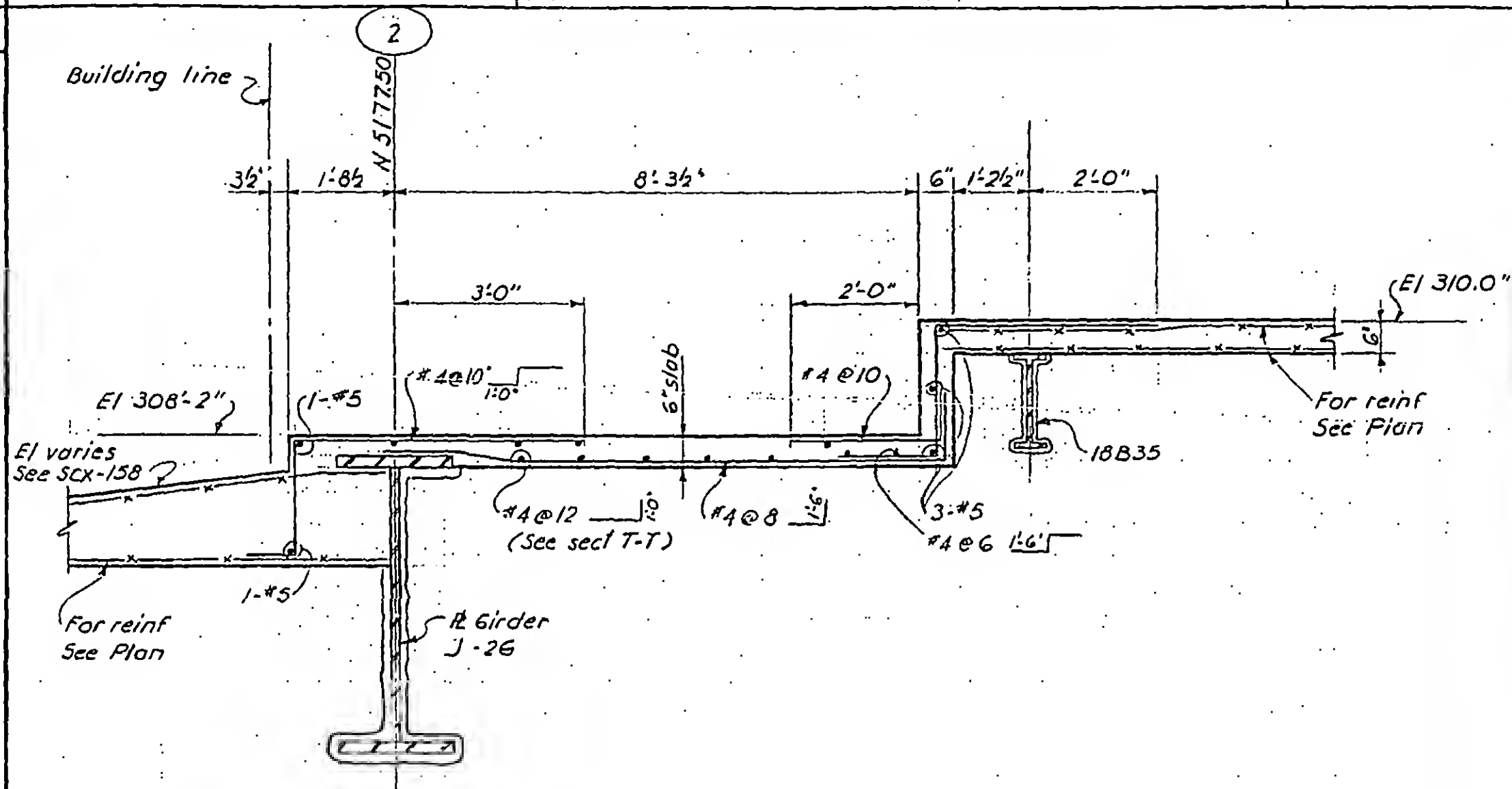
8-JK8-5.11

Structural & Civil Engineers

TITLE PERIMETER SECTIONS AT EL 310.0"

DATE 6-11-69

REVISIONS



Section R-R

$(\frac{1}{2}'' - 1'0'')$



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8-JK8-5.12

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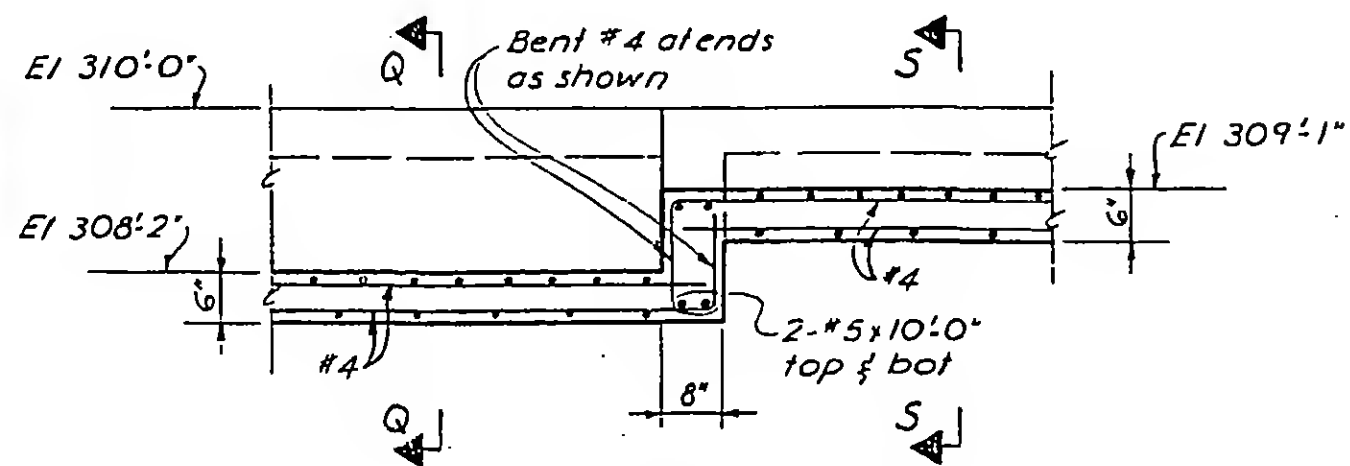
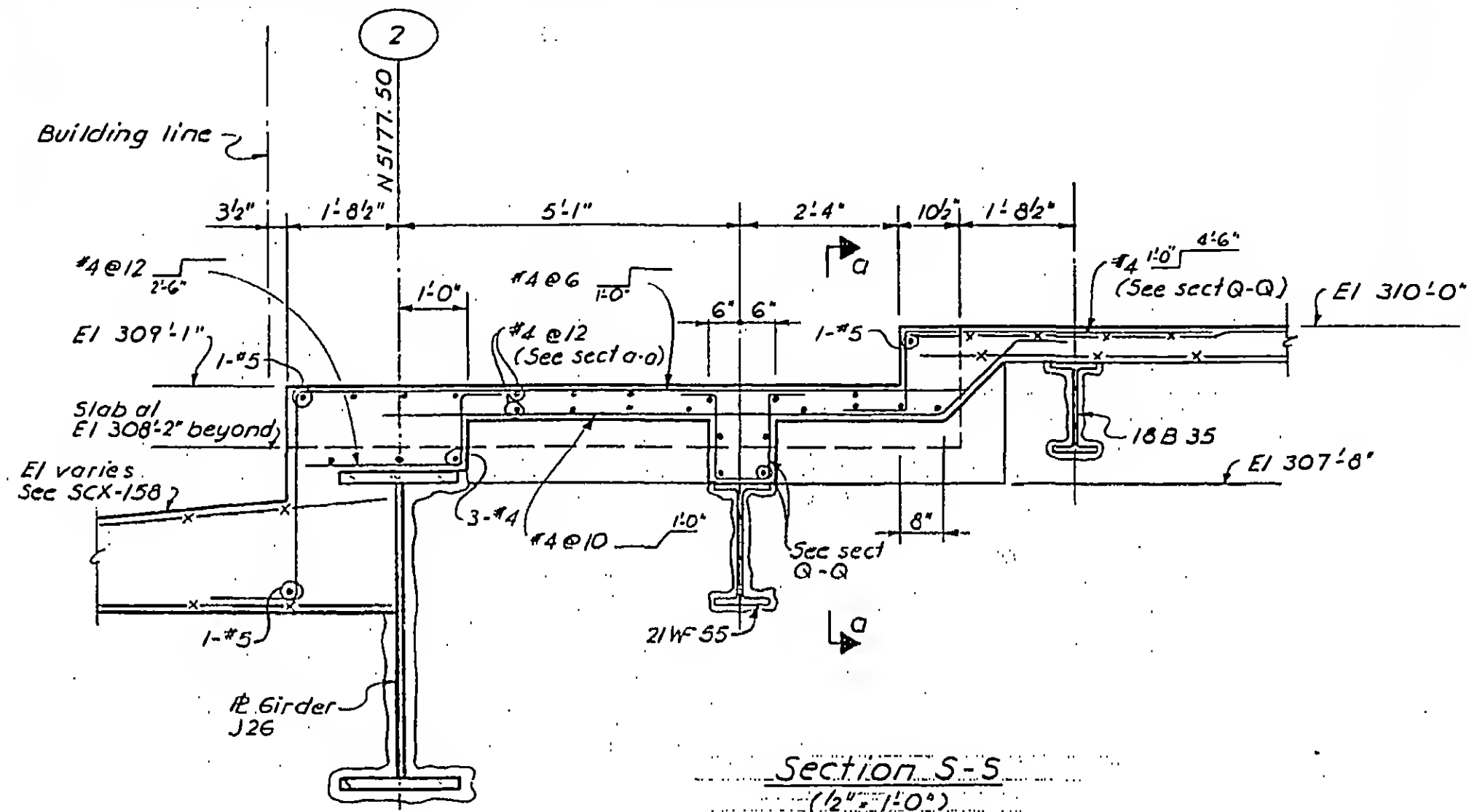
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TITLE PERIMETER SECTIONS AT EL 310'-0"

DATE 6-11-69

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8-JK8-5.13

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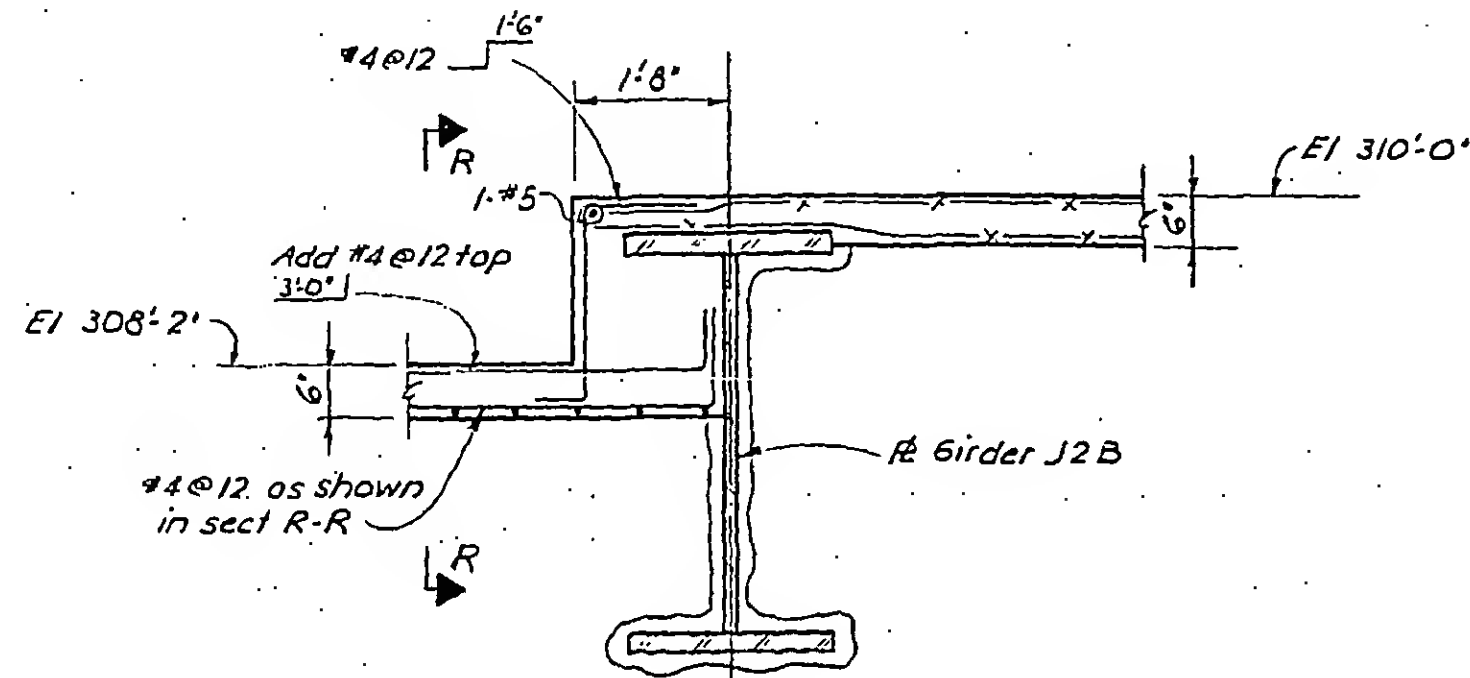
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PROJECT THE WORLD TRADE CENTER

TITLE PERIMETER SECTIONS AT EL 310'-0"

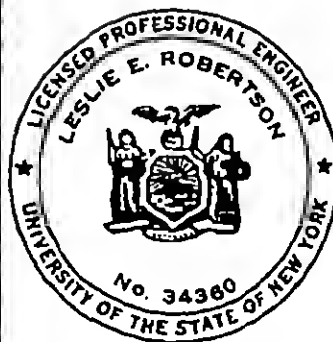
DATE 6-11-69

REVISIONS



Section T-T

(1/2" = 1'-0")



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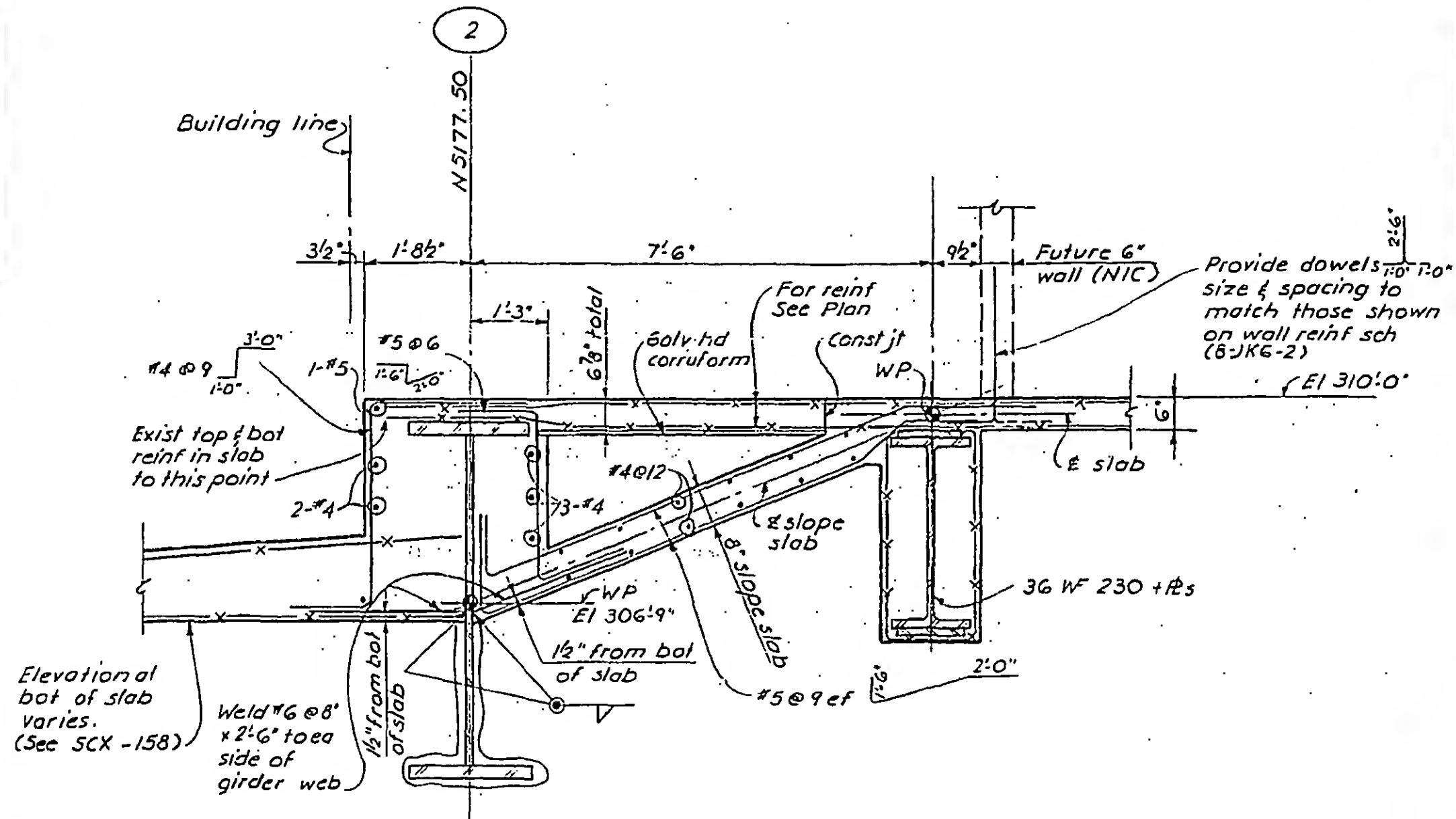
F. Smith

REVIEWED

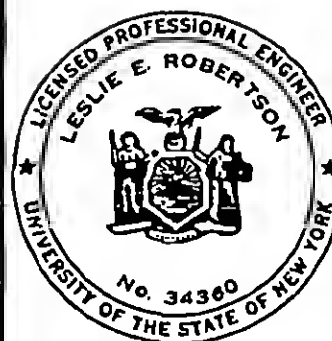
E.L.

8-JK8-5.14

REVISIONS



Section U-U
(1/2" = 1'-0")



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REVIEWS

E.L

8=JK8-5.15

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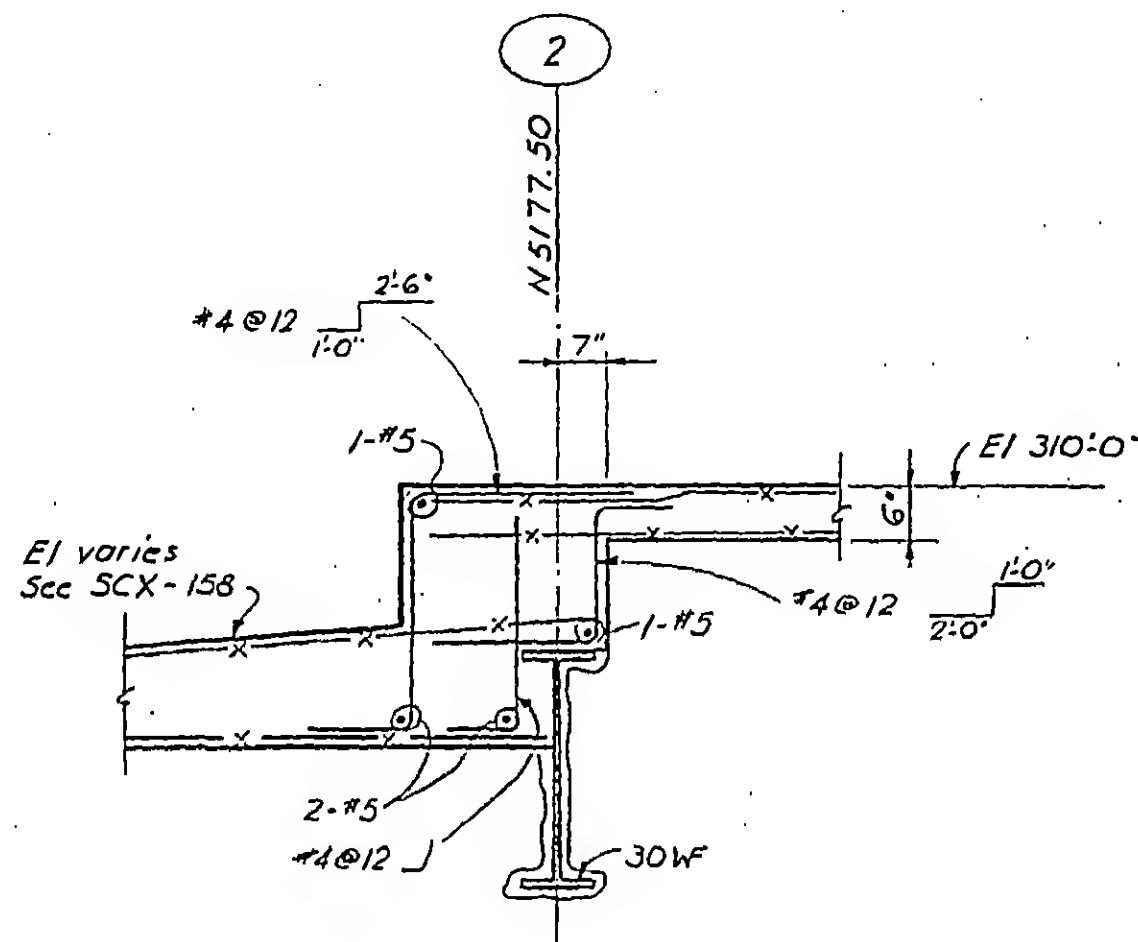
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PROJECT THE WORLD TRADE CENTER

TITLE PERIMETER SECTIONS AT EL 310'-0"

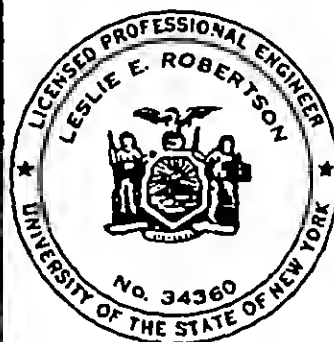
DATE 6-11-69

REVISIONS



Section V-V

(1/2" = 1'-0")



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REVIEWED

E.L.

8-JKB-5.16

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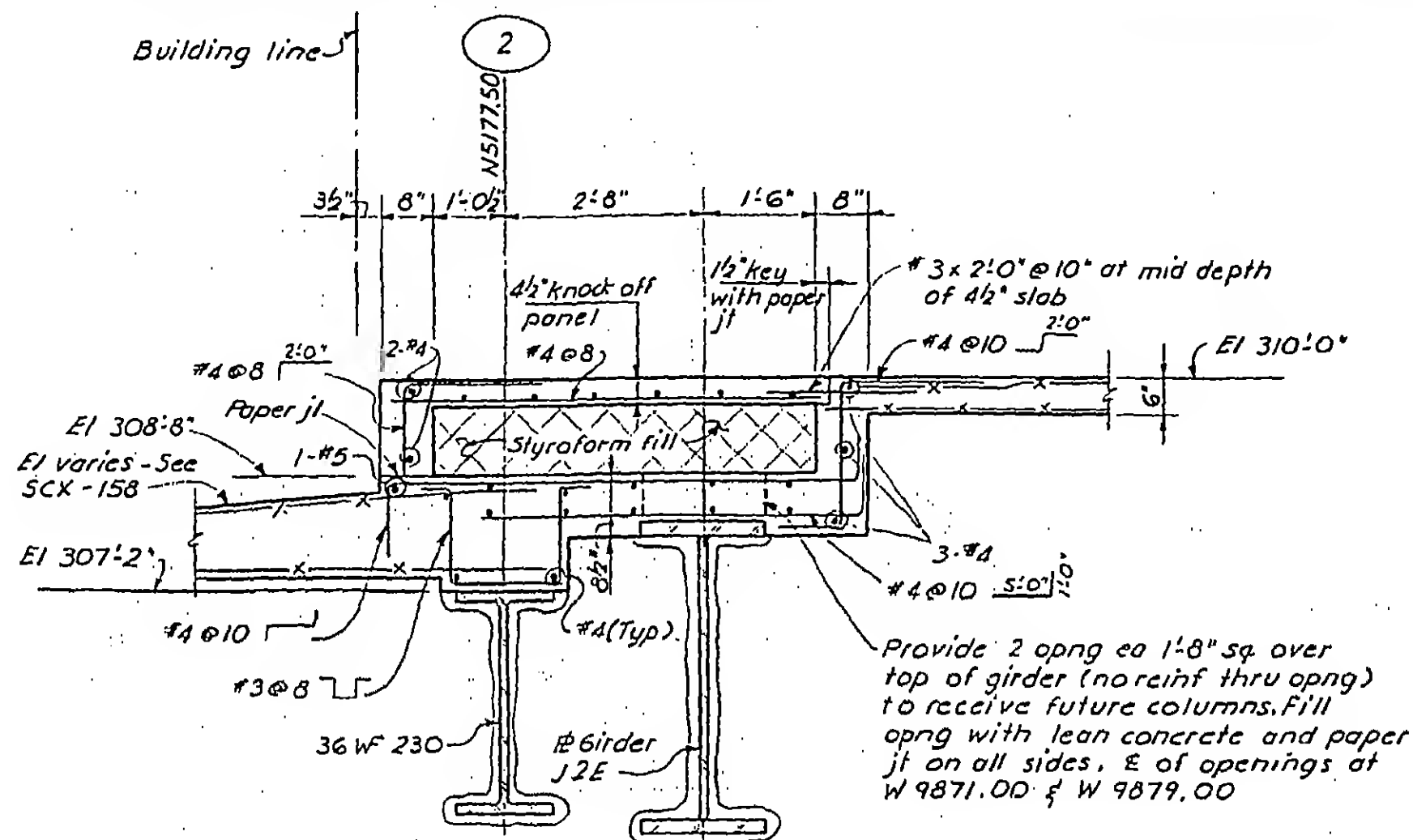
Structural & Civil Engineers

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TITLE PERIMETER SECTIONS AT EL 310'-0"

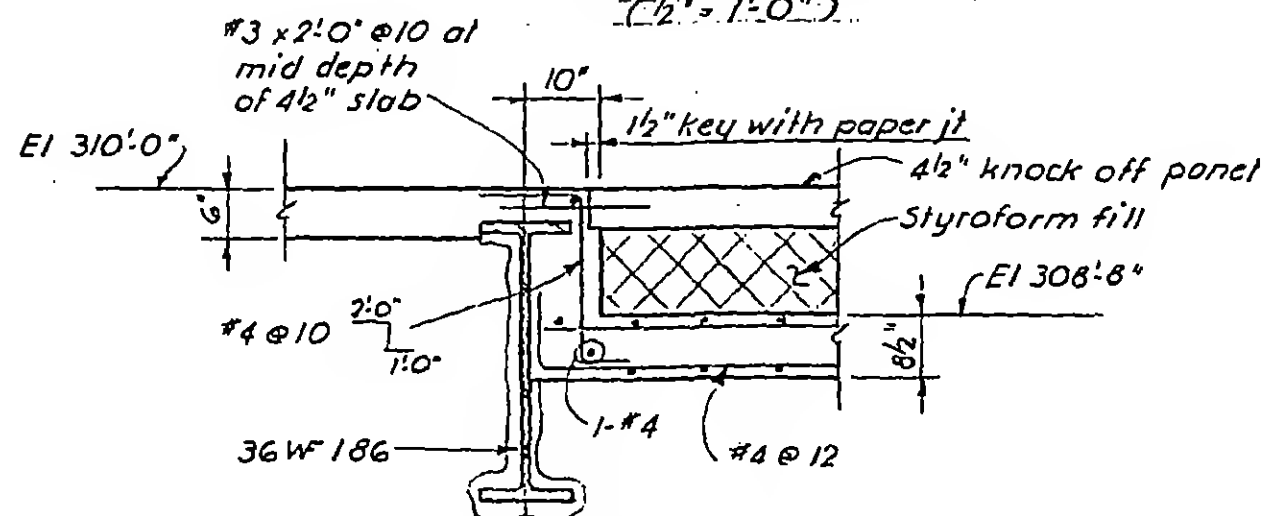
DATE 6-11-69

REVISIONS



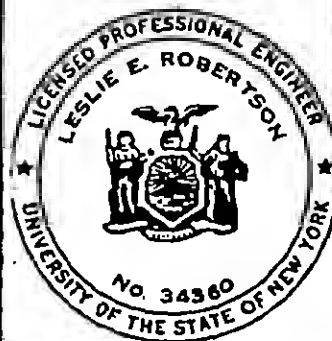
Section W-W

(1/2" = 1'-0")



Section X-X

(1/2" = 1'-0")



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DRAWN

F. Smith

REVIEWED

8-JK8-5.17

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

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PROJECT

THE WORLD TRADE CENTER

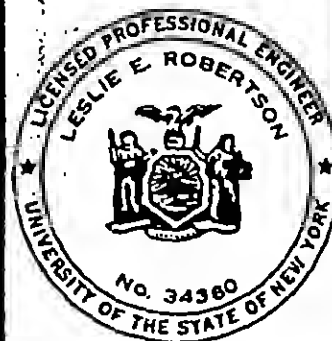
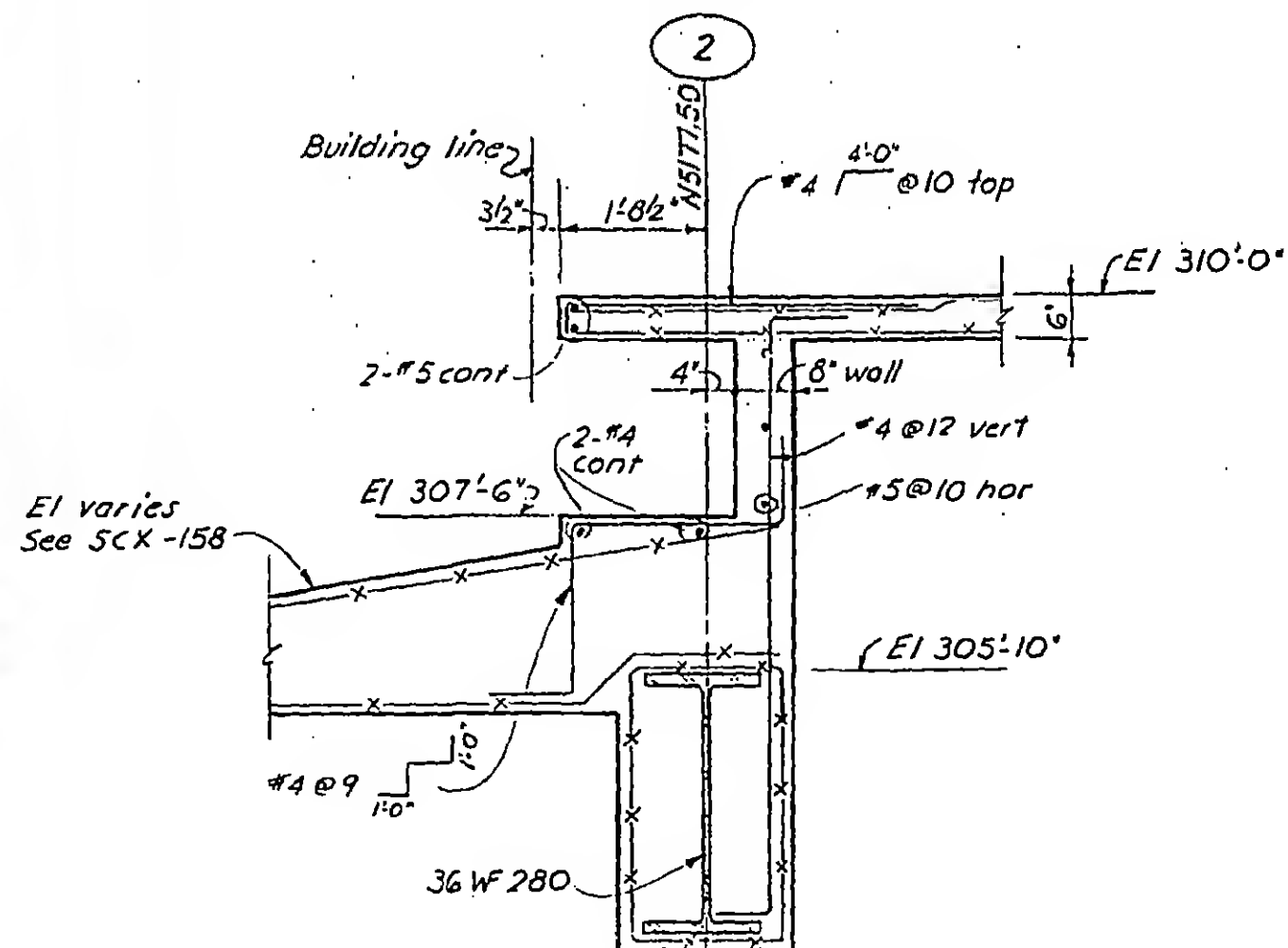
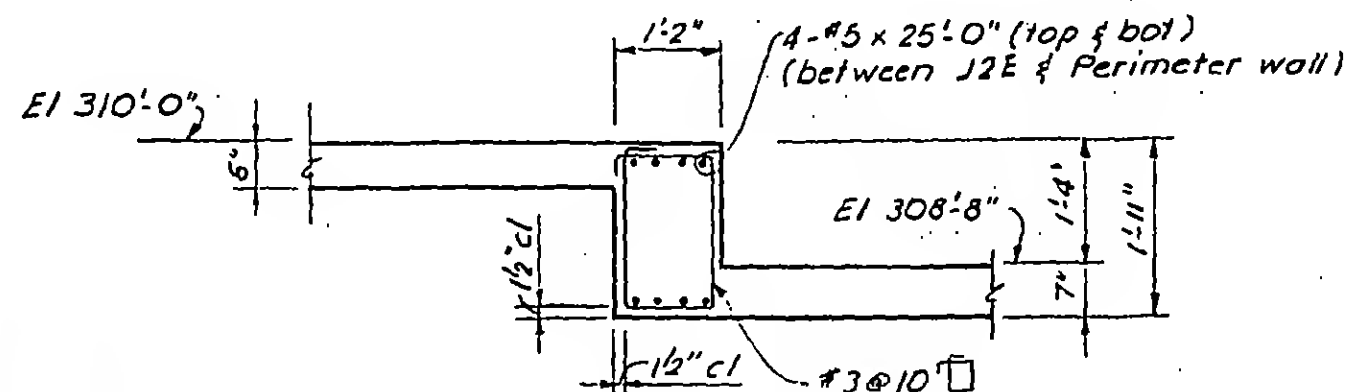
TITLE

PERIMETER SECTIONS AT EL 310'-0"

DATE

6-11-69

REVISIONS



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8-JK 8-5.18

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PROJECT THE WORLD TRADE CENTER

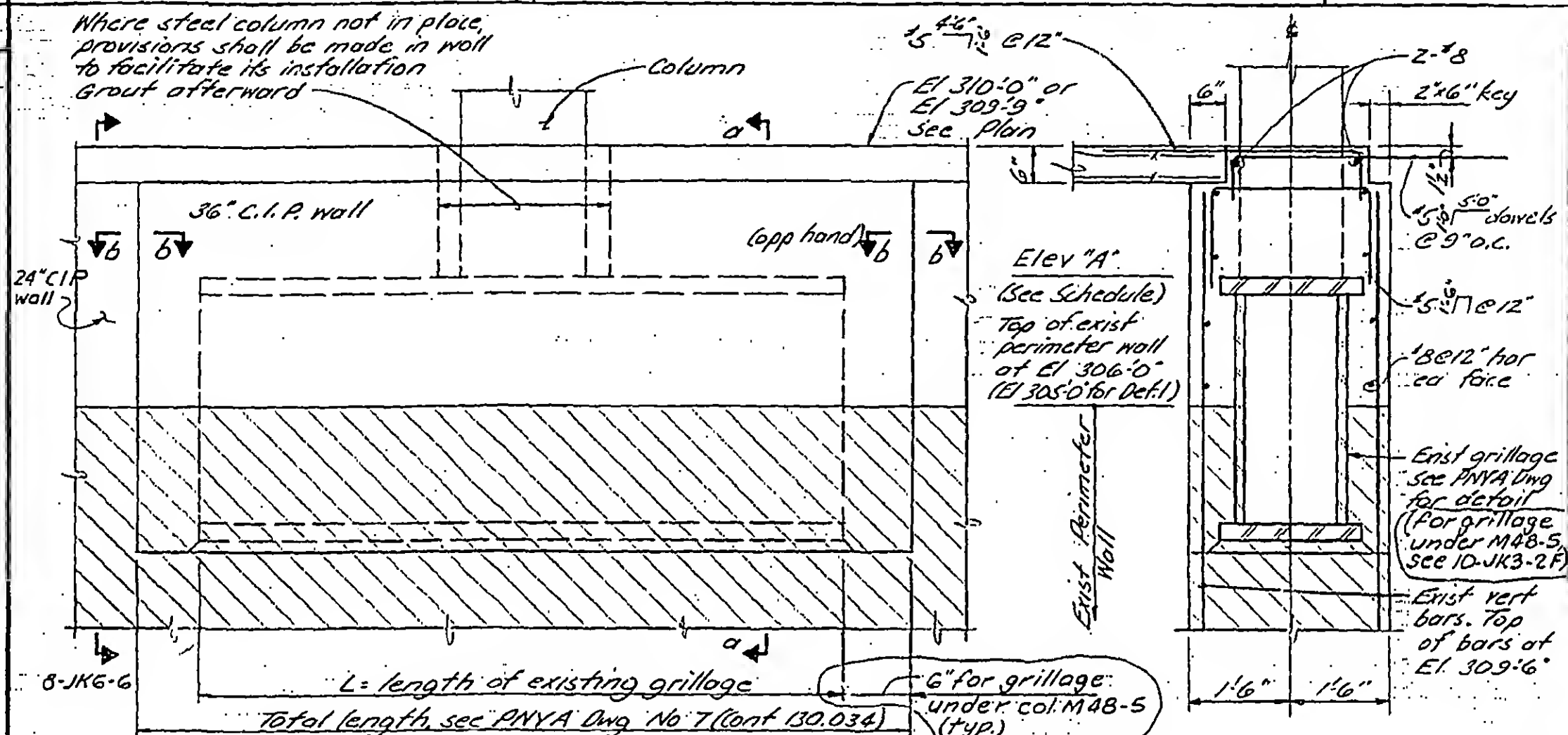
TITLE DET. AT EXIST. GRILLAGE OVER TOP OF SLURRY WALL

DATE 6-11-69

REVISIONS

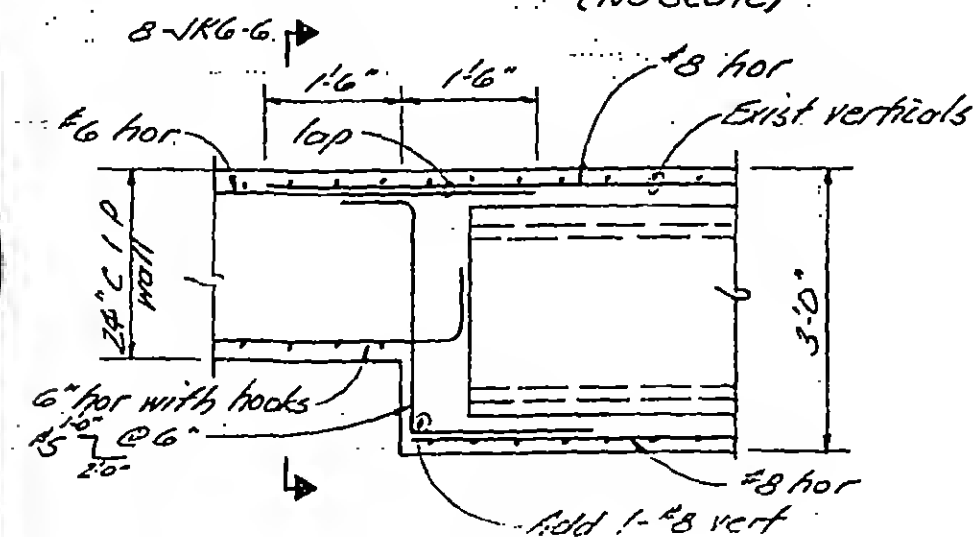
10-1-69

Where steel column not in place,
provisions shall be made in wall
to facilitate its installation
Grout afterward



ELEVATION (LOOKING EAST)
(No scale)

Section A-A



Section b-b

| DETAIL NO. | A TOP ELEV OF EXIST GRILLAGE | L LENGTH OF EXIST GRILLAGE |
|------------|------------------------------------|----------------------------------|
| * 1 | 305'9" | 7'-0 3/8" |
| 2 | 308'0" | 10'-0" |
| 3 | 307'0" | 5'-0" |
| 4 | 306'6" | 6'-0" |

NOTES:

- * For Det. 1 a 48" deep girder (as shown on NE Bldg Dngs SNE-53 [WTC-235.00]) sits on top of grillage at NS167.13, W9839.50. Stop all hor bars interfered with by this girder with hooks. If this girder is not in place make provisions for its installation. Grout afterward. See also Det. A' on 8-JK8-7.2.
- Concrete for 24" or 36" C.I.P. walls to be $f'_c = 4000$ psi.

8-JK8-7.1



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J.A.

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PROJECT THE WORLD TRADE CENTER

TITLE DETAIL AT PERIMETER WALL

DATE 6-11-69

REVISIONS

See N-E Bldg.
Dwg SNE-53
(NTC-235.00) for
exact orientation
and location of girder.

4"x6" key as shown
on 8-JK8-7.1

36" C.I.P. wall

Form 3" deep
pocket in
36" C.I.P. wall

Top of grillage
as shown on
Oct. 1 (8-JK8-7)

48" deep girder (N.I.C.)
See NE Bldg Dwg SNE-53

Provide dowels 5"⁵⁰ x 6" e.f.
(Project 2'-6" outside
face of wall.) See N-E Bldg.
Dwg. SNE-53 for exact
location

Provide dowels
5"⁵⁰ x 6" e.f.
(Project 2'-6" outside
face of wall.) See
N-E Bldg. Dwg. SNE-53
for exact locations

DETAIL 'A'
(LOOKING WEST)
($\frac{1}{2}$ " = 1'-0")

8-JK6-6

NS08750

EI. 310'-0"

EI. 308'-0"

24" C.I.P.
wall

Form 3" deep pocket
in 24" C.I.P. wall to
receive beam under
N-E Bldg contract.

DETAIL 'B'
(LOOKING WEST)
($\frac{1}{2}$ " = 1'-0")



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DRAWN

J.A.

REVIEWED

8-JK8-7.2

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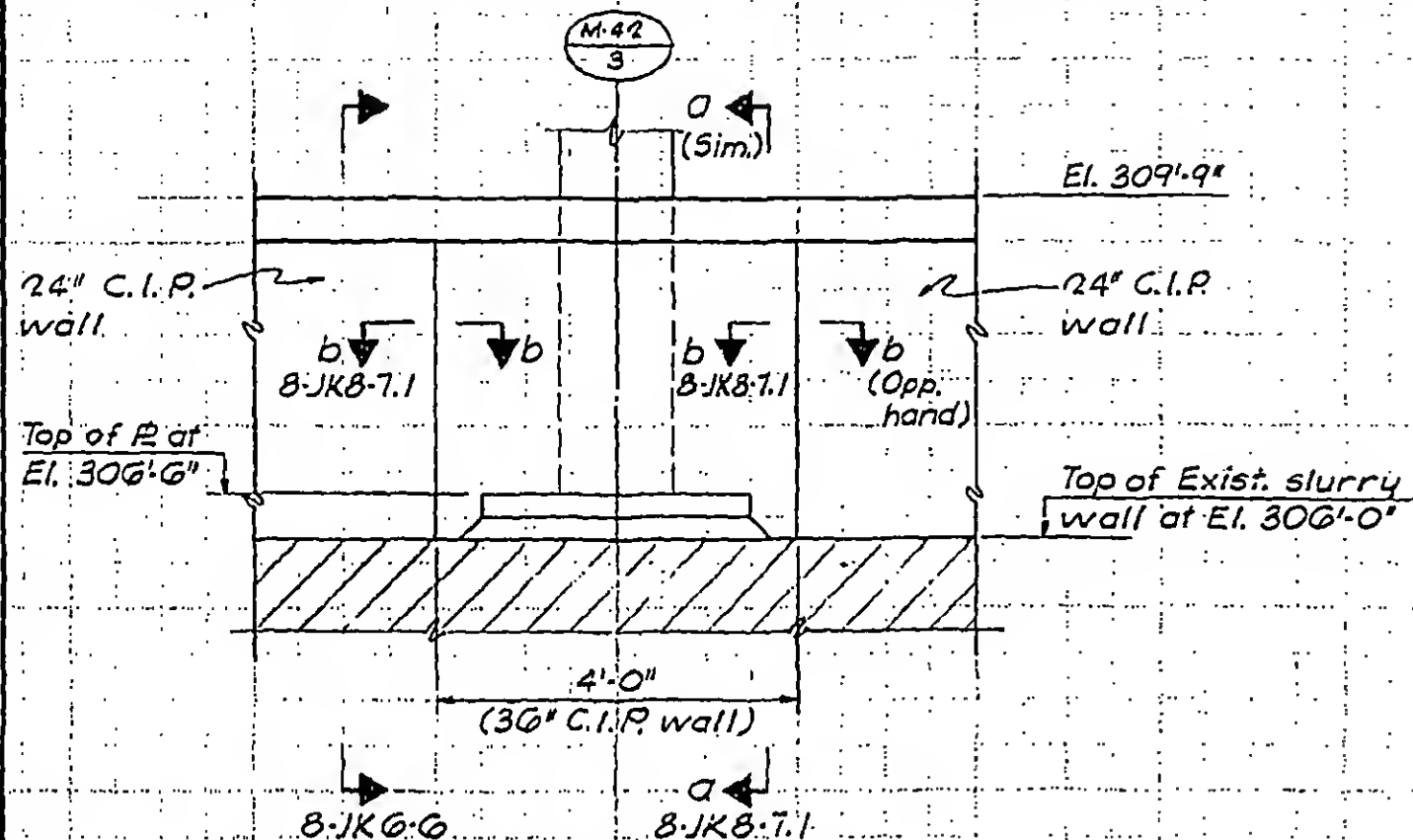
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE DETAIL OF COLUMN FTG. OVER TOP OF SLURRY WALL

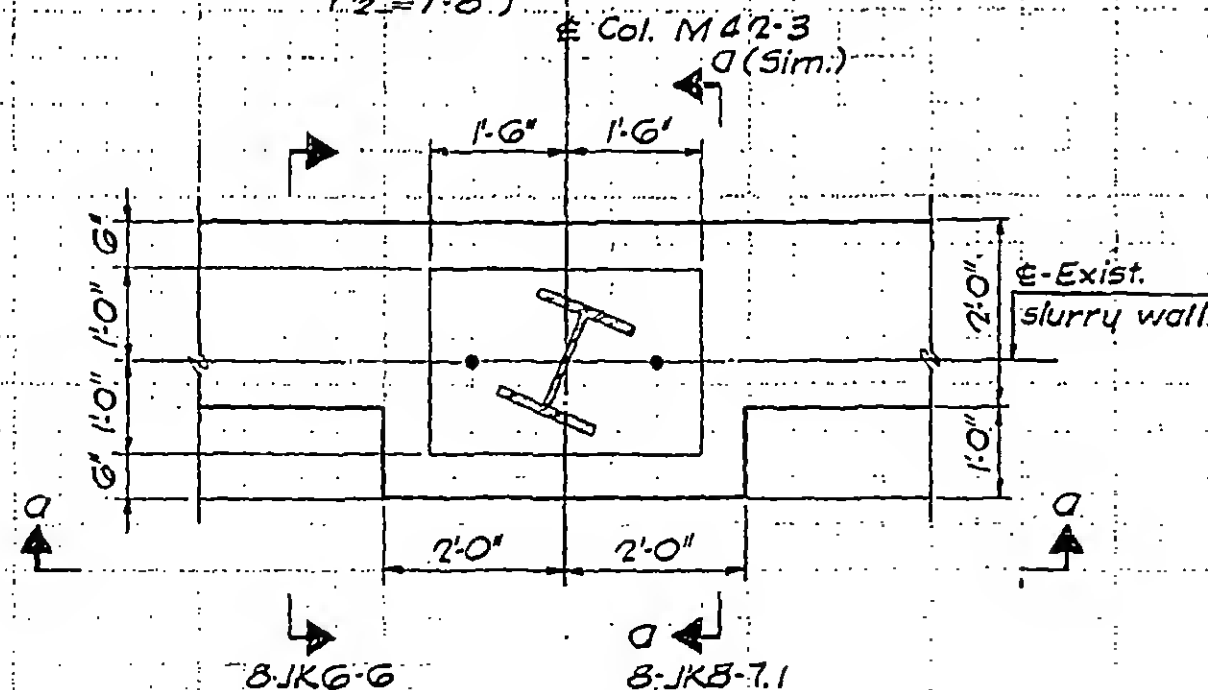
DATE 10-1-69

REVISIONS



SECTION a-a

(1/2" = 1'-0")

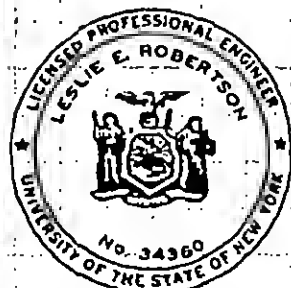


PLAN

(1/2" = 1'-0")

Notes

1. Concrete for C.I.P. wall to be $f'_c = 4000$ psi



DESIGNED

DRAWN
G.K.

REVIEWED
E.L.

8-JK8-7.3

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

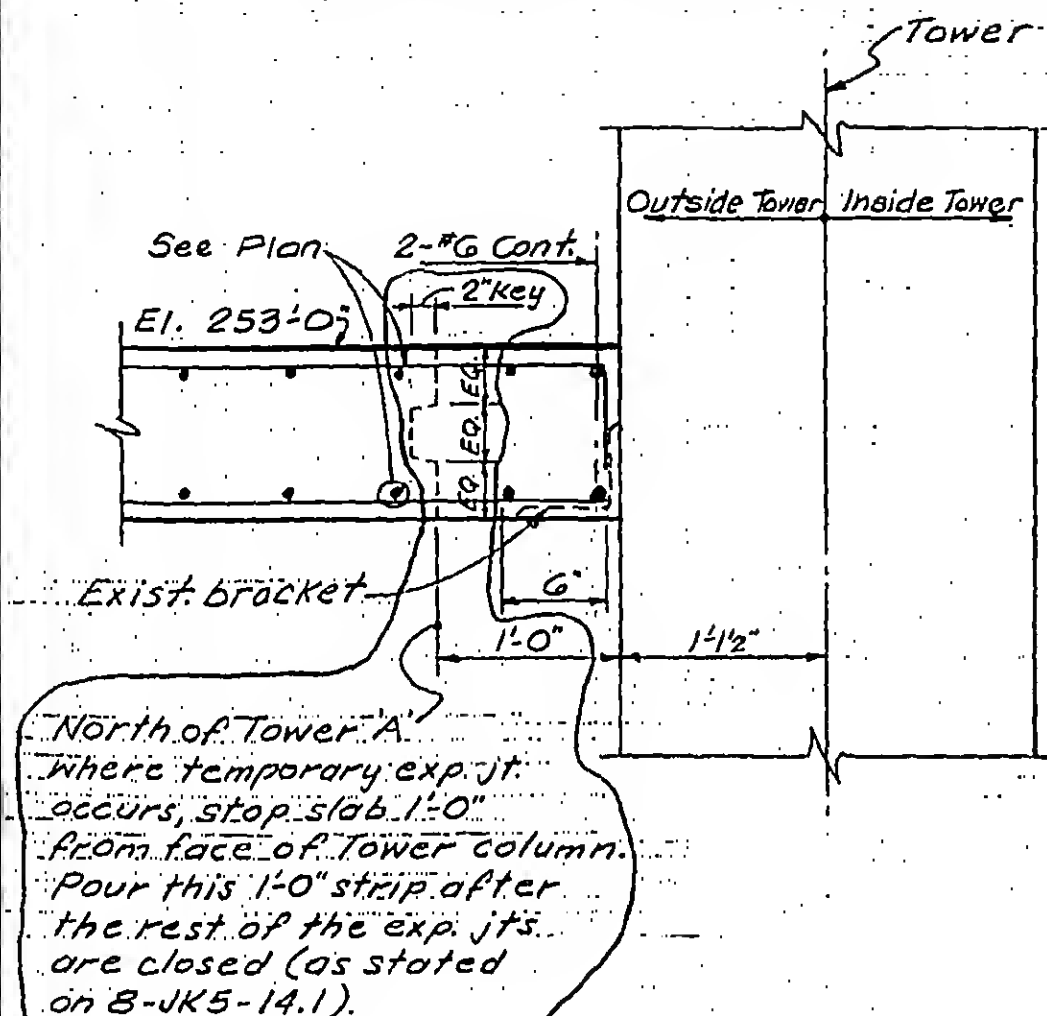
TITLE

SECTIONS @ ELEVATION 253'-0"

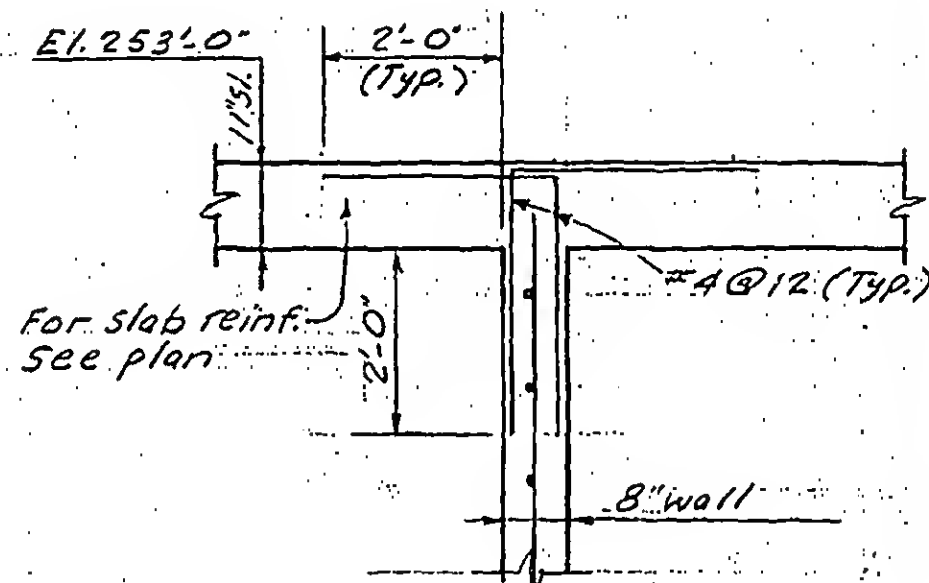
DATE 12-18-68

REVISIONS

4-2-69



SECTION A-A



SECTION B-B



DESIGNED

DRAWN

S.C.

REVIEWED

8-JK8-9.1

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

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PROJECT THE WORLD TRADE CENTER

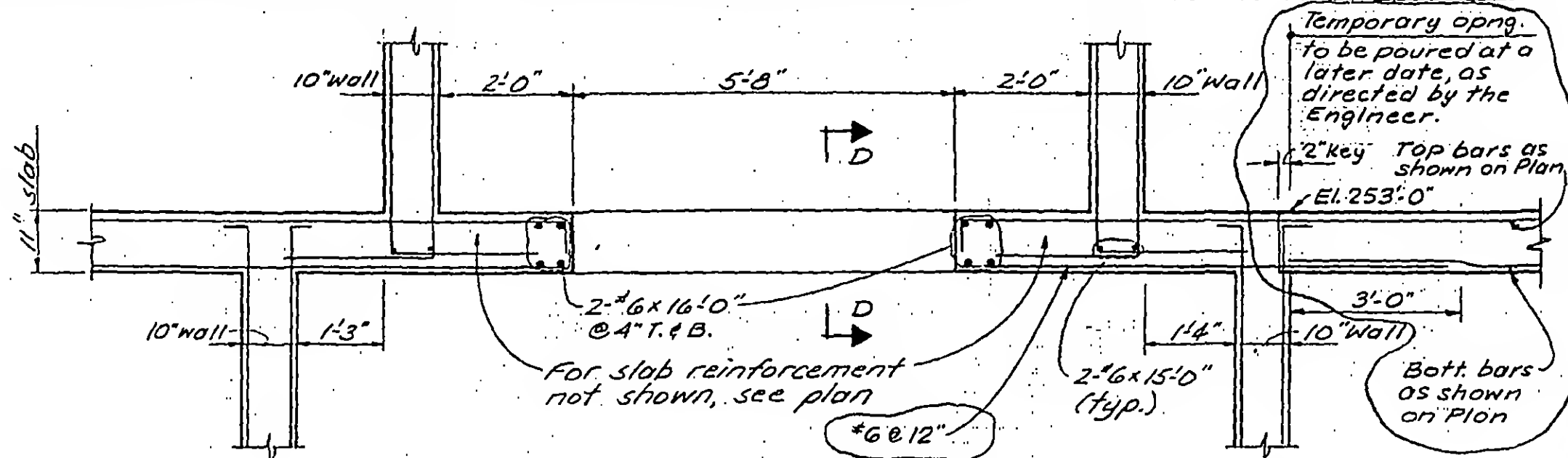
TITLE SECTIONS AT EL. 253'-0"

DATE 12-18-68

REVISIONS

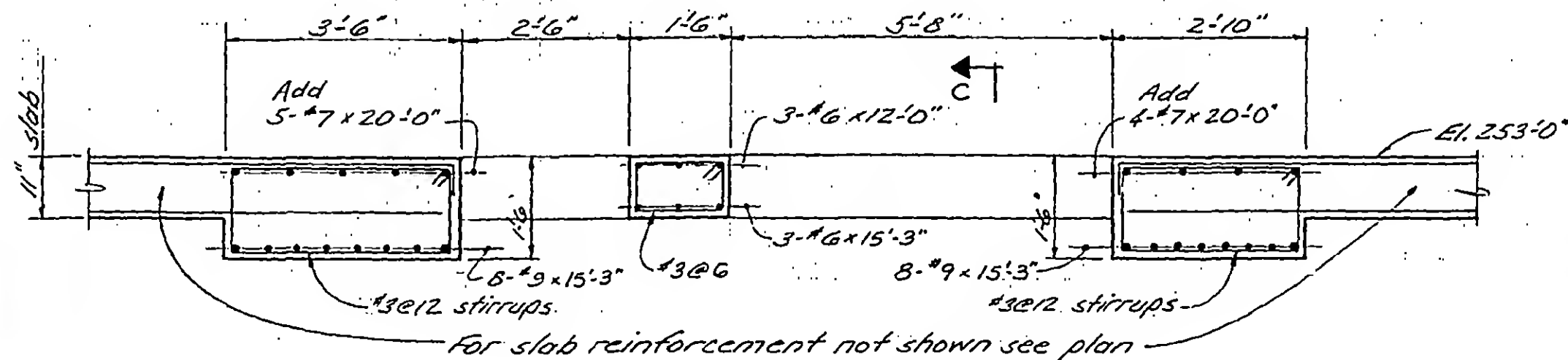
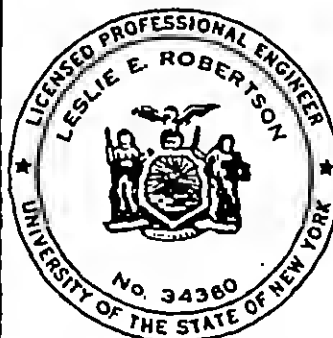
4-2-69

5-6-69

Section C-C
(SCJ-29)

Notes:

1. For location & size of Mech. openings thru R.C. wall, see Archt. & Mech. Dwg.
2. See 8-JKG-2.1 & 2.2 for typical wall reinf.

Section D-D
(SCJ-29)

DESIGNED

DRAWN
S.C.

REVIEWED

J.M. & E.L.

8-JKB-9.2

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

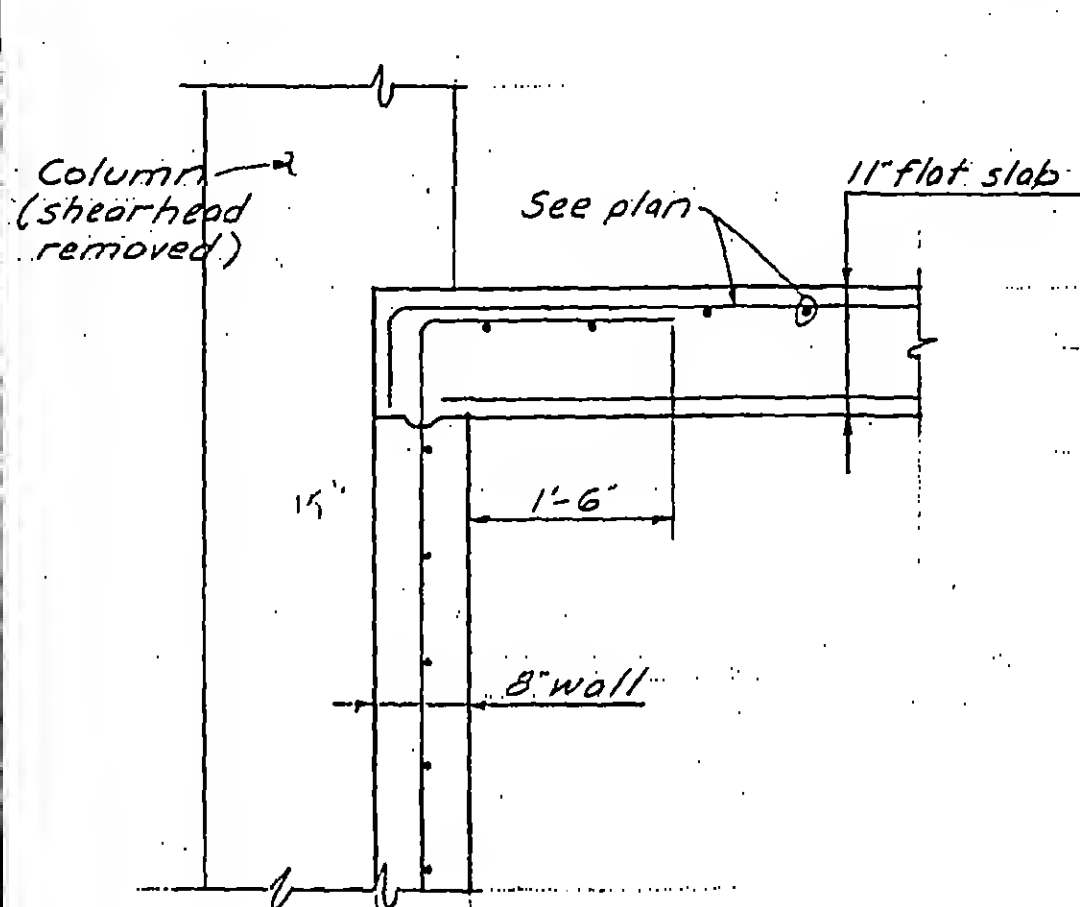
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

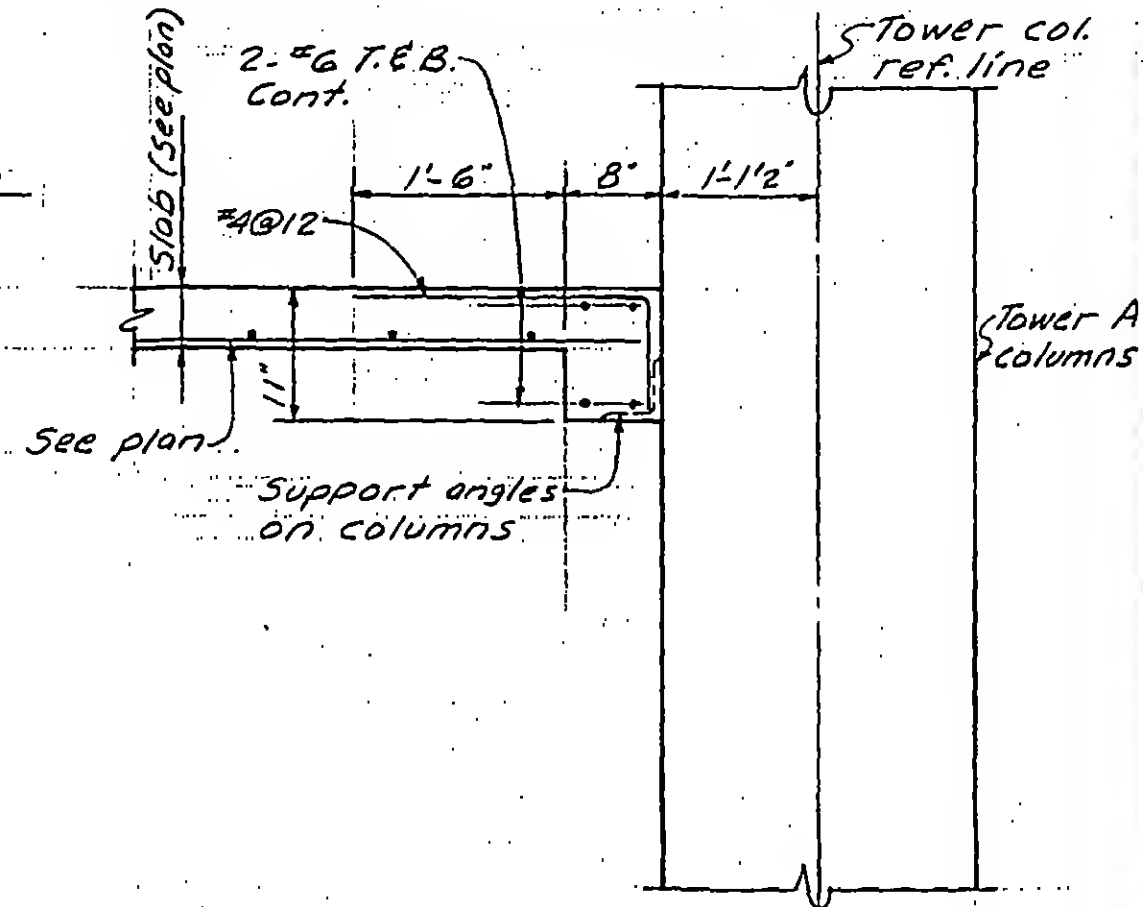
TITLE SECTIONS AT EL. 253'-0"

DATE 1-16-69

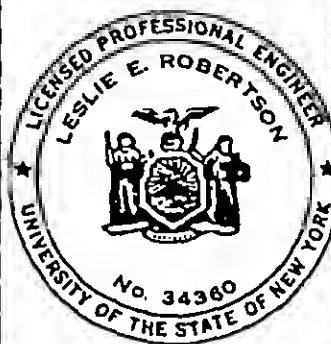
REVISIONS



Section E-E



Section F-F



DESIGNED

DRAWN

S.C.

REVIEWED

8-1K8-9.3

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON.

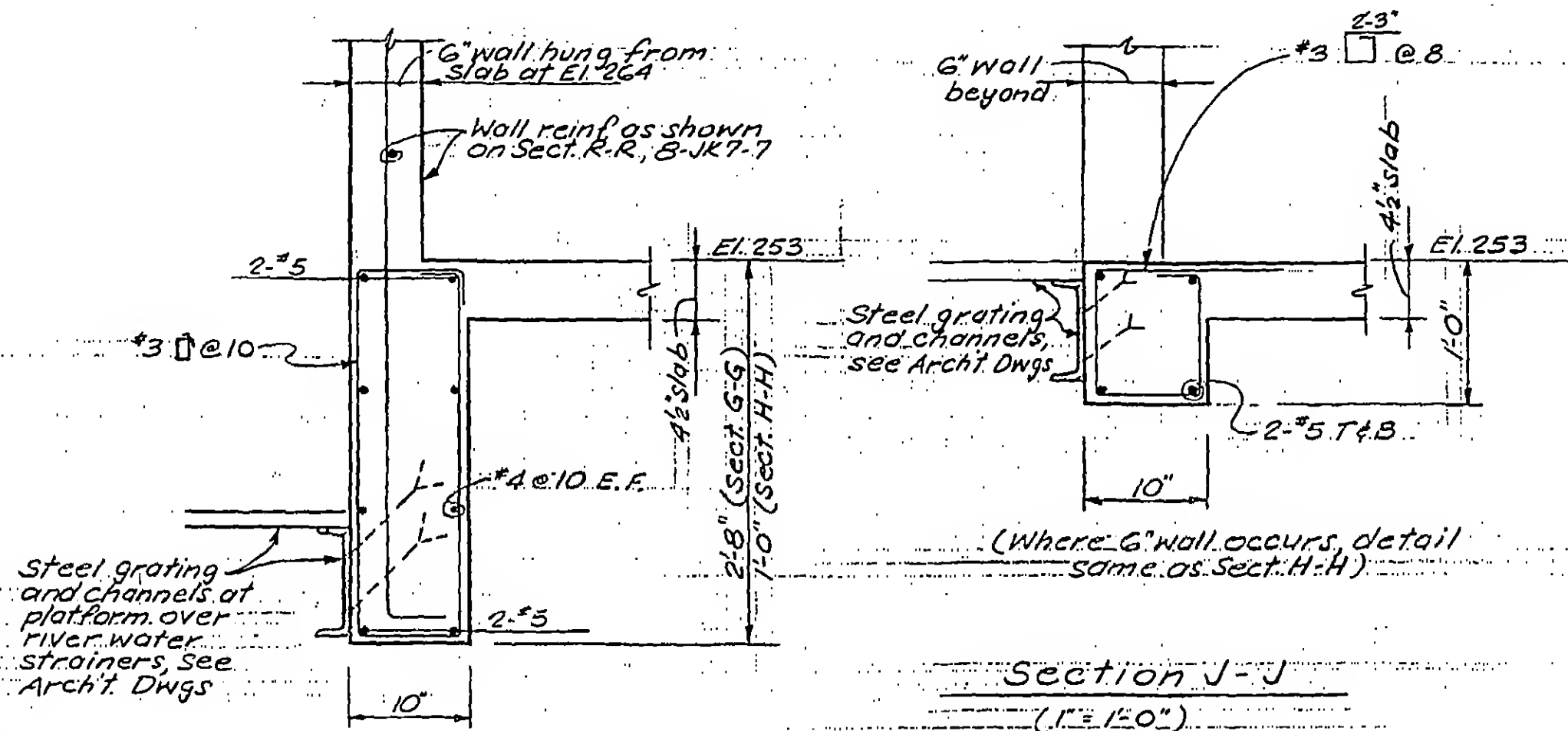
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE SECTIONS AT EL. 253'-0"

DATE 8-8-69

REVISIONS



DESIGNED

DRAWN

S.C.

REVIEWED

8-JK8-9.4

SKILLING - HELLE - CHRISTIANSEN - ROBERTSON Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE REFRIGERATION MACHINE BASE EL 257'-0"

DATE 5-1-68

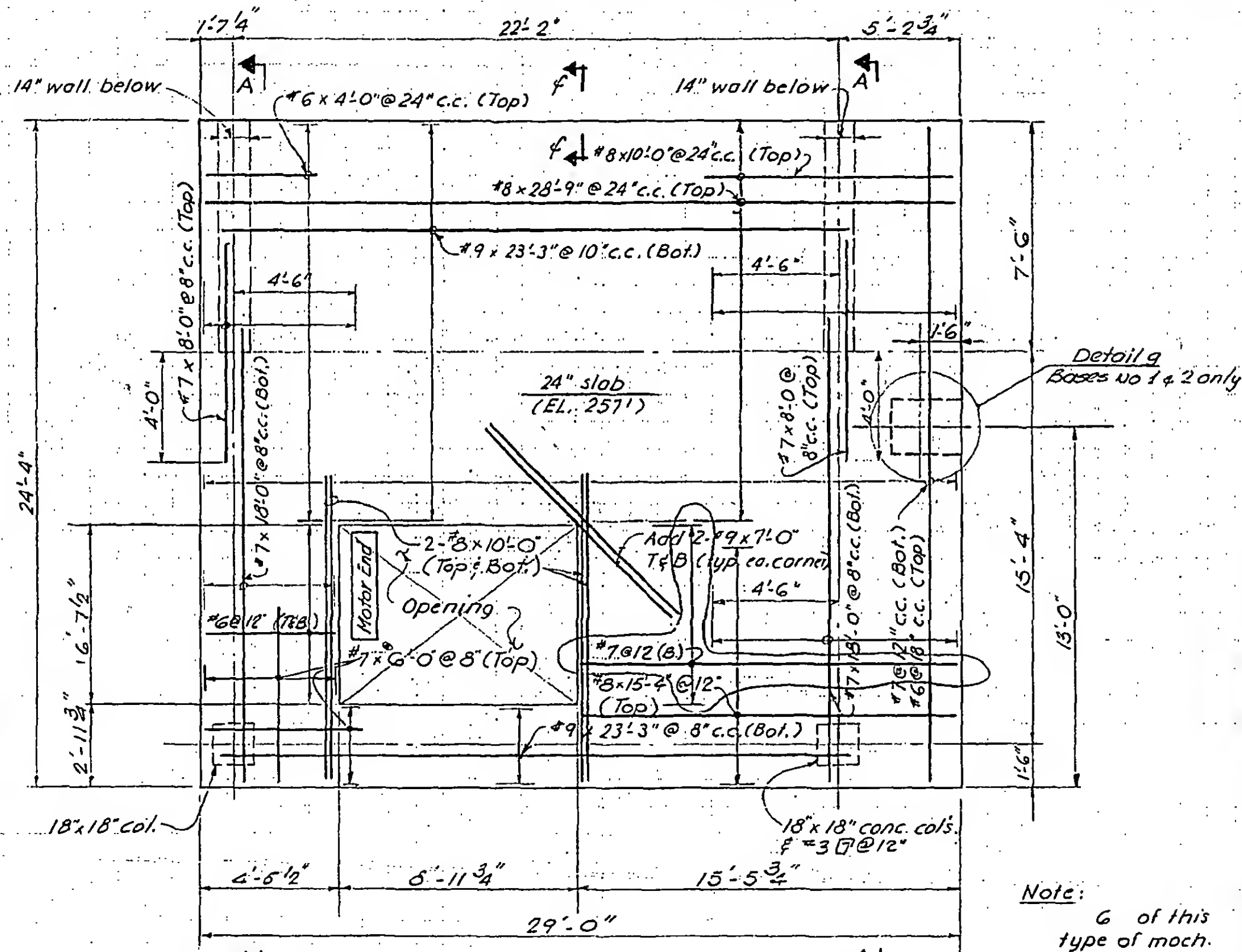
REVISIONS

7-9-68

12-18-68

5-21-69

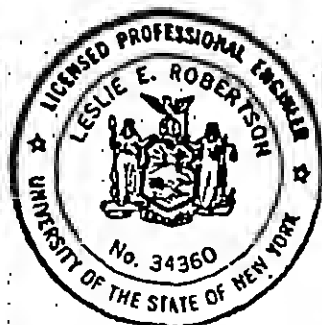
10-13-69



Detail 9
Bases No 1 & 2 only

Note:
6 of this
type of mach.
bases are req'd.

Plan
Bases No. 1 thru 6



DRAWN
S.C.

REVIEWED
J.M. & E.L.

8-JK8-10.1

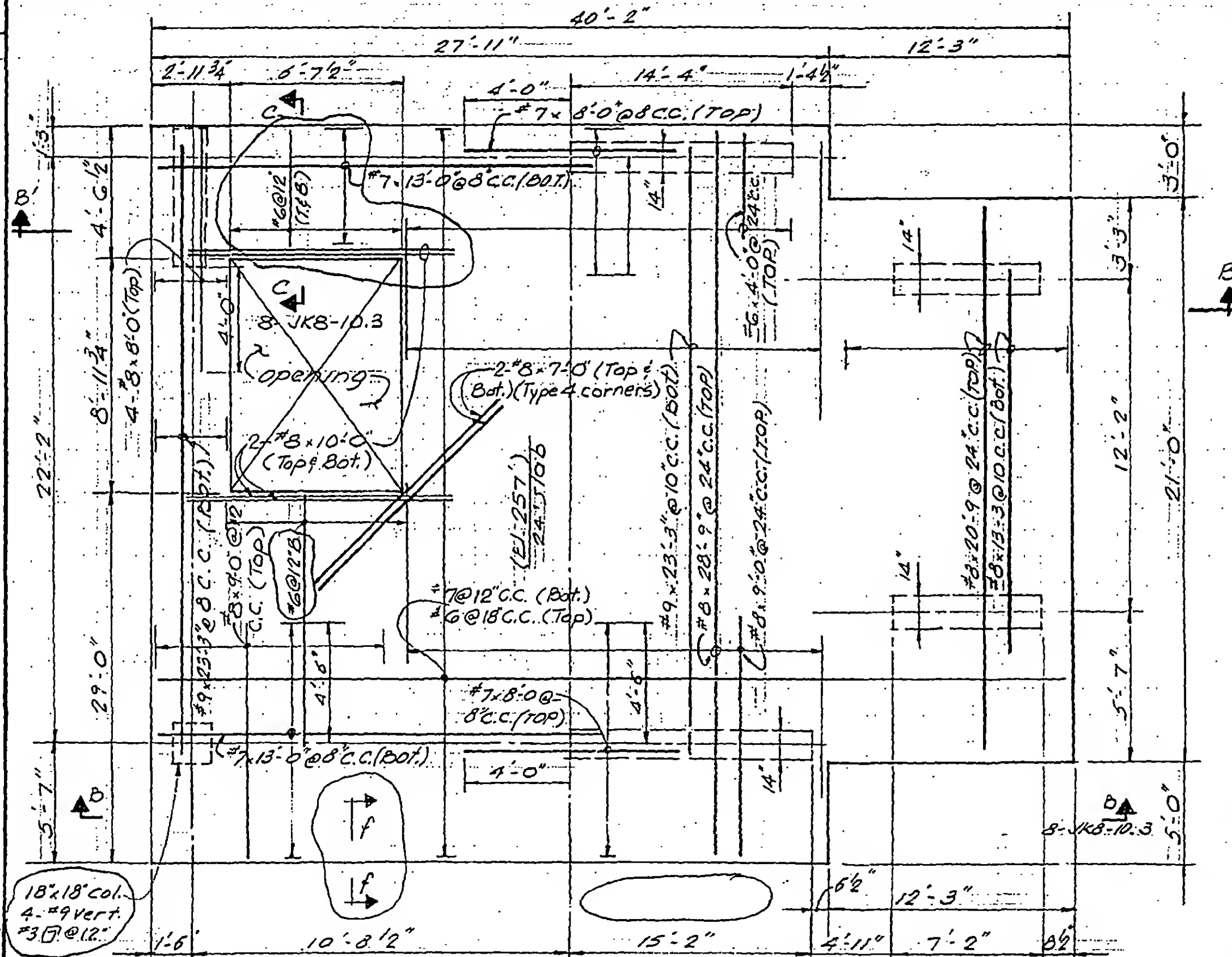
SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

PROJECT
THE WORLD TRADE CENTERTITLE
REFRIGERATION MACHINE BASE - EL. 257'-0"DATE
7-9-68

REVISIONS

12-18-68



DESIGNED

DRAWN

S.C.

REVIEWED

J.M. & E.L.

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON Structural & Civil Engineers

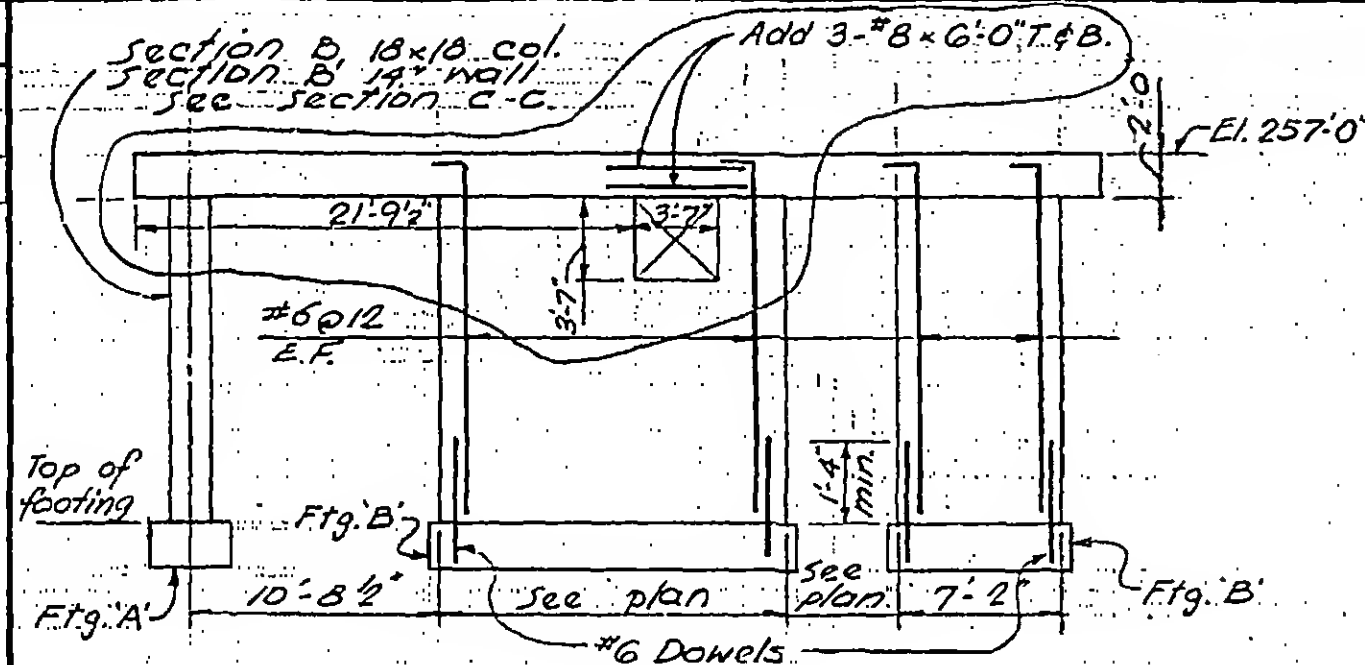
PROJECT THE WORLD TRADE CENTER TITLE REFRIGERATION MACHINE BASE - EL. 257'-0" DATE 7-9-68

REVISIONS

12-18-68

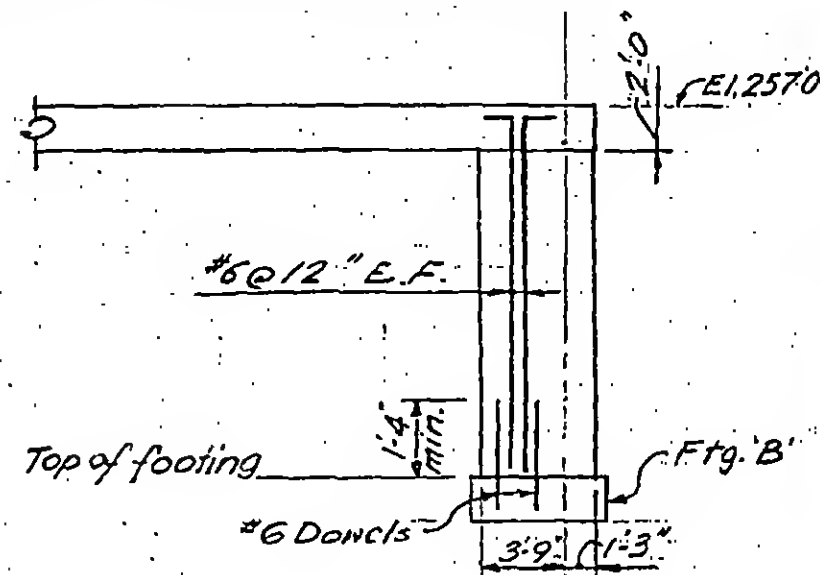
5-21-69

9-15-69

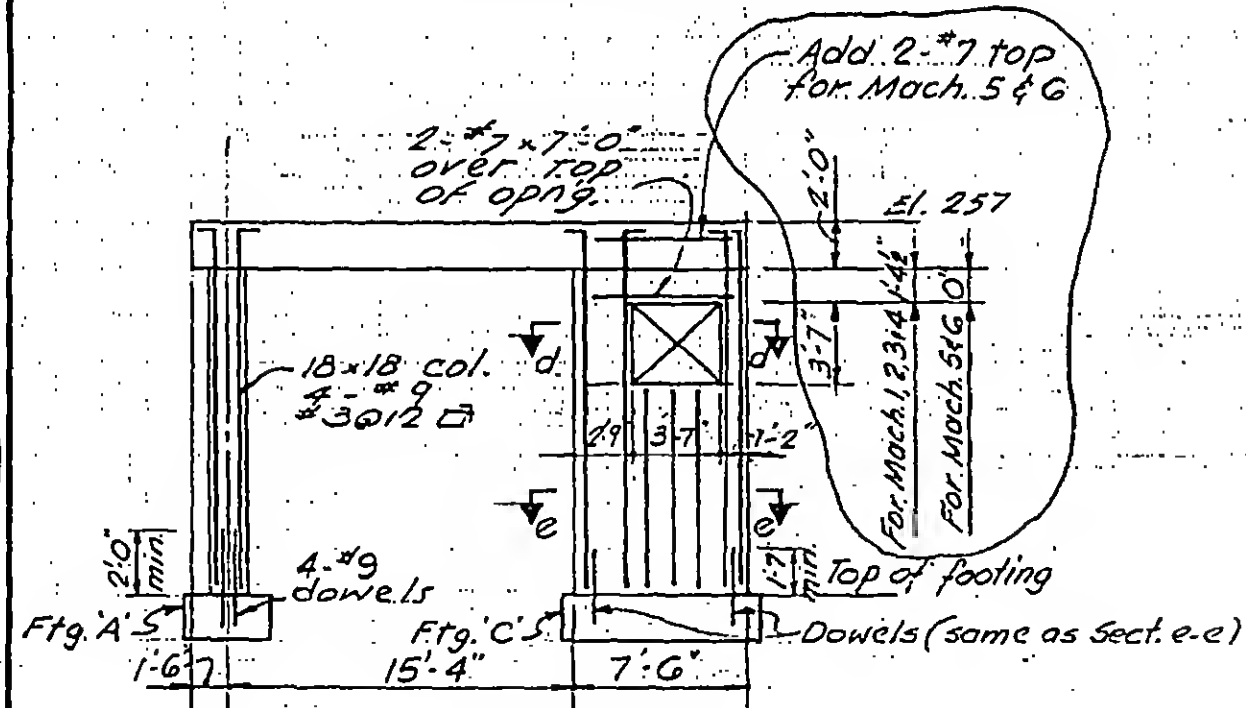


Section B-B

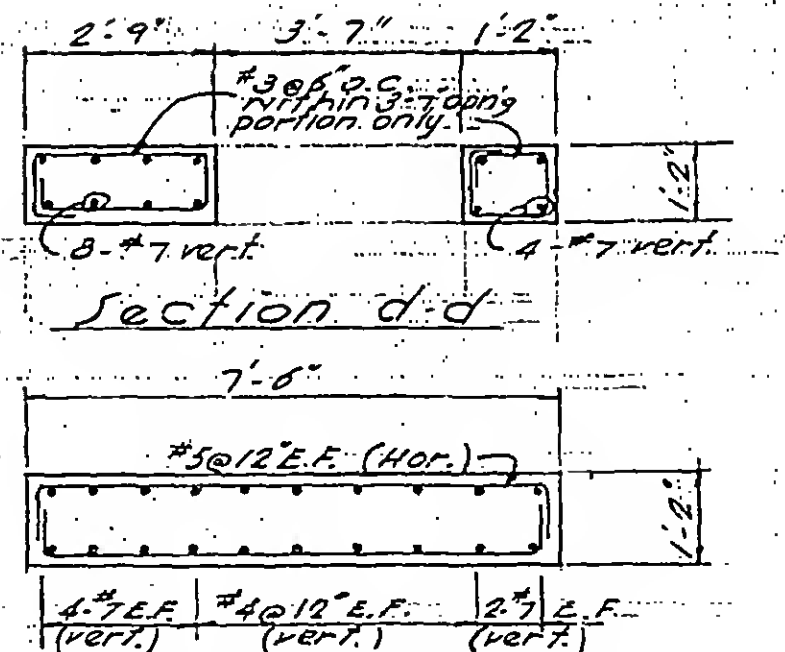
Section B'-B'



Section C-C



Section A-A



Section e-e

Note: See 8-JKB-10.4 for detail of footings.



DESIGNED

DRAWN

S.C.

REVIEWED

8-JKB-10.3

SKILLING, HELLE. CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

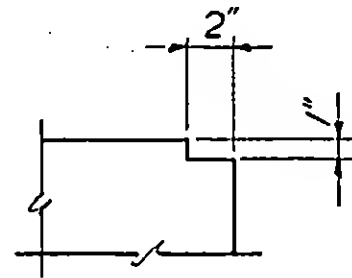
PROJECT THE WORLD TRADE CENTER

TITLE REFRIGERATION MACHINE BASE-EL. 257'-0"

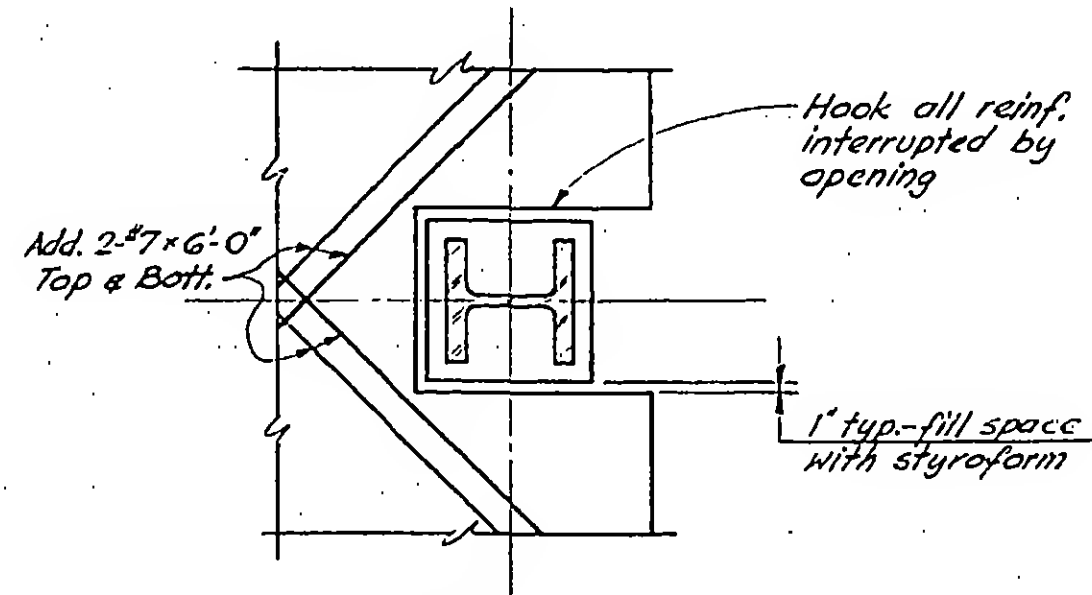
DATE 12-18-68

REVISIONS

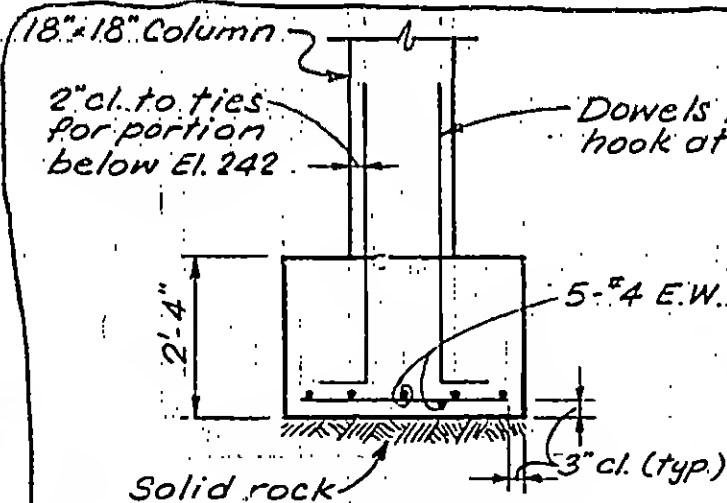
5-21-69



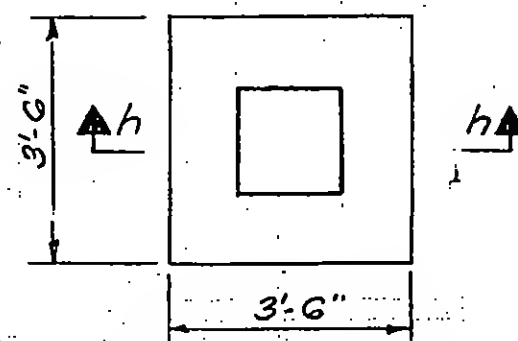
Section f-f
Typical around perimeter
of machine bases



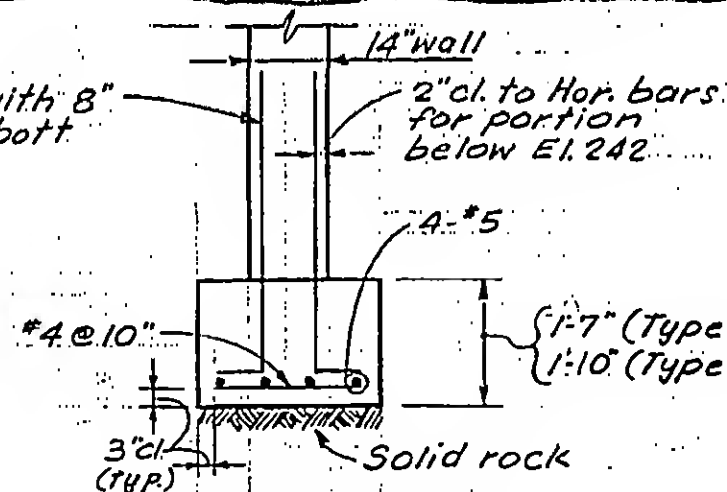
Detail g
Bases No. 1 & 2 only



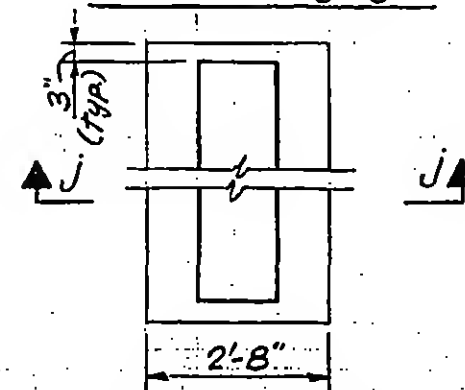
Section h-h



Footings 'A'



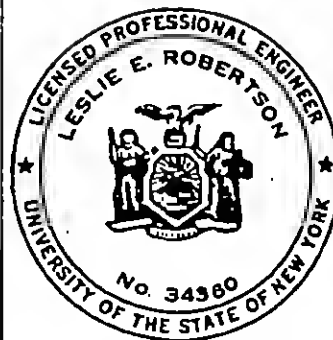
Section j-j



Footings 'B' & 'C'

Notes:

1. All concrete for footings shown to be $f'c = 3000 \text{ psi}$.
2. All footings to rest on solid rock. Further cutting, if req'd to insure soundness of rock, as directed by the Engineer.



DESIGNED

DRAWN
S.C.

REVIEWED

J.M. & E.L.

8-JK8-10.4

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

PROJECT

THE WORLD TRADE CENTER

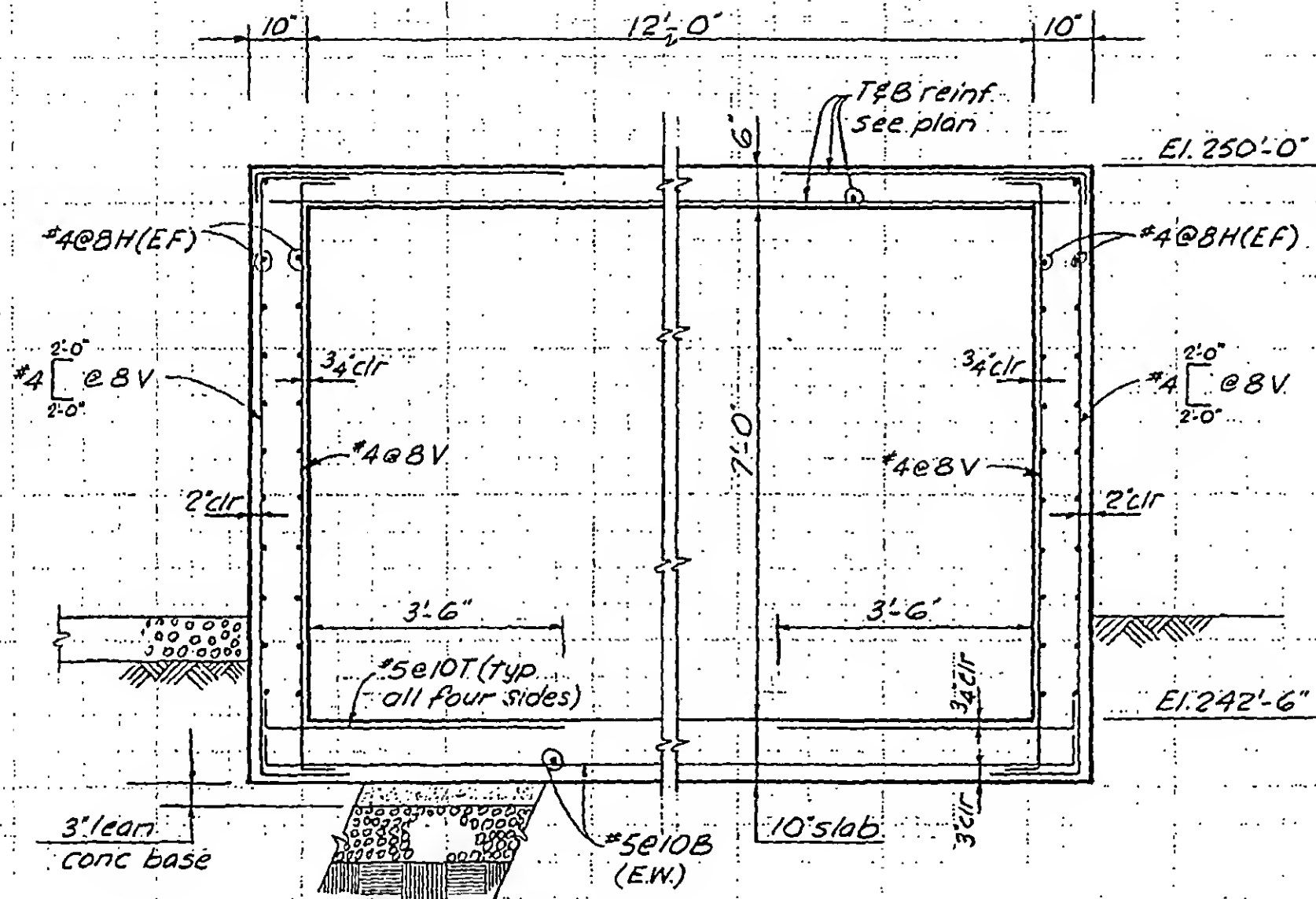
TITLE

CABLE VAULT NO. 1

DATE

5-1-68

REVISIONS

3-25-70 GEN
REV.

Notes:

1. Wall reinf. shown is typical on all four sides.
2. Concrete: $f'_c = 3000$ psi



DESIGNED

DRAWN
A.F.REVIEWED
E.L.

(1/2"=1'-0")

B-JKB-12.1

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE CABLE VAULT N°2

DATE 5-1-68

REVISIONS

3-13-70 GEN.
REV.

1-#6 T & B. cont.
thru-out the
entire length
of platform
(min. lap = 2'-3")

Add. #4 @ 10 B

#4 @ 8 V.
(E.F.)

PATH track slab

El. 242'-5"

3' Lean
conc. base

Top of buttress
or solid rock
(or elev. approved
by the Engineer)

C (Sim)
8-JK8-12.9

Wall ftg.
see 8-JK6-3T & B. reinf
see plan.

#4 @ 8 H (E.F.)

#4 @ 8 V.
(E.F.)

El. 250'-0"

Top of buttress
see PNYA DWGS.

#4 @ 10

#4 @ 12 B.

#4 @ 12 T. (Typ)



DESIGNED

DRAWN
V.H.A.

REVIEWED

K.H. & E.L.

8-JK8-12.2

Structural & Civil Engineers

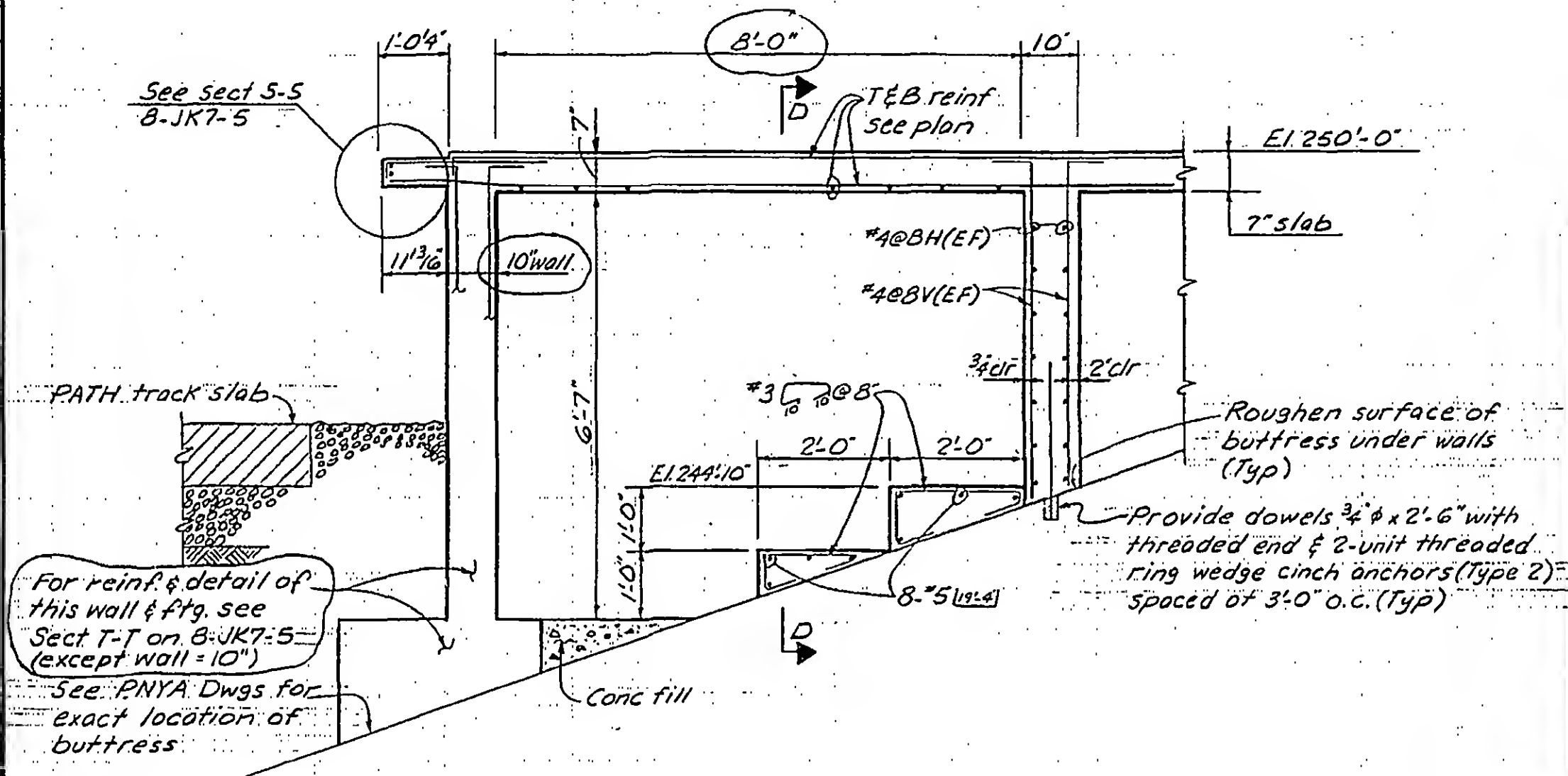
| | |
|-------|-------------------|
| TITLE | CABLE VAULT No. 3 |
|-------|-------------------|

DATE 5-1-68

REVISIONS

3-4-70 GEN.
REV.

3-12-70.



DESIGNED

K.H

DRAWN

..A.L.I.

REVIEWS

51

 $(1/2'' \pm 1'-0'')$

8-JK8-12.3

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE

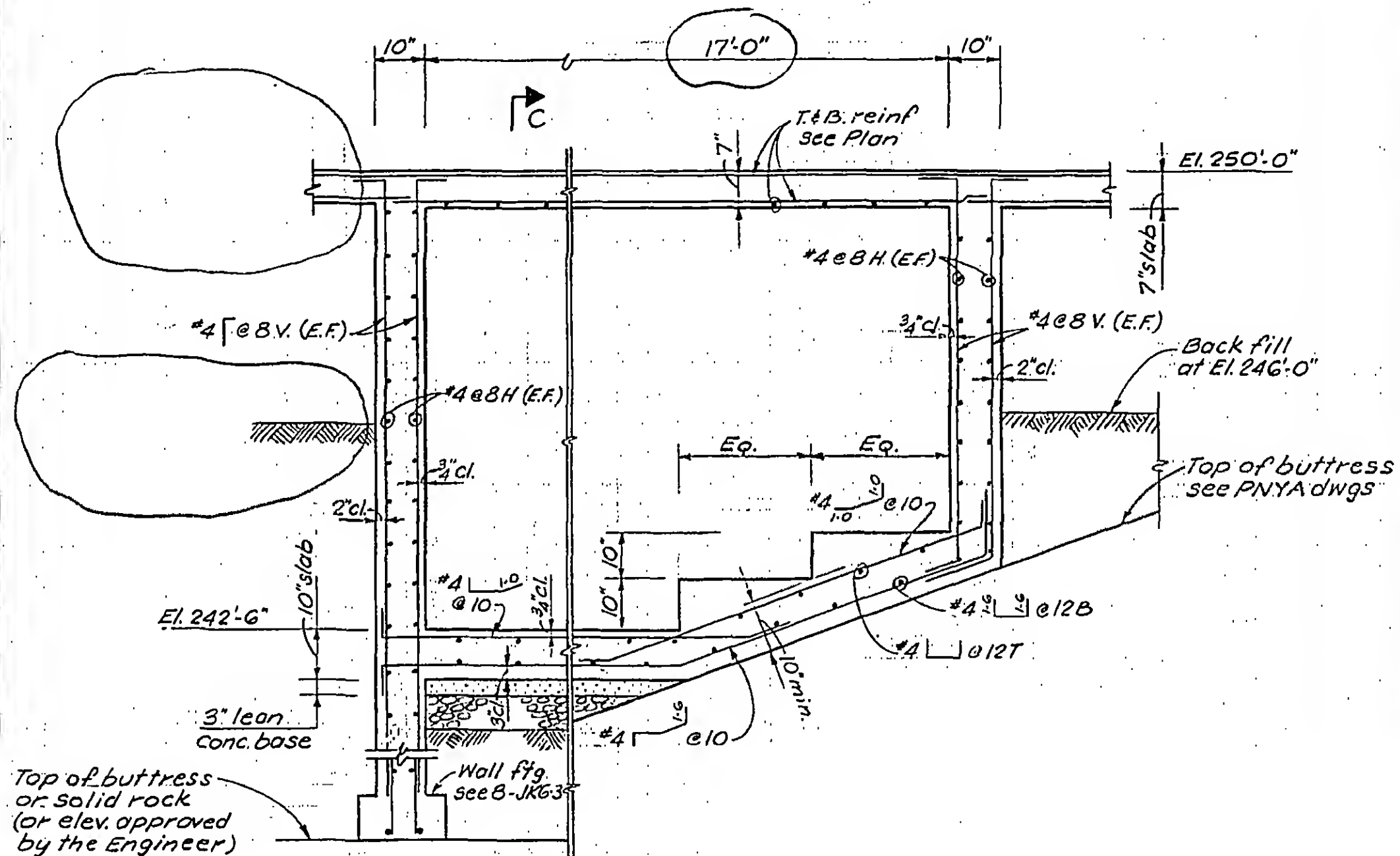
CABLE VAULT No. 4

DATE 5-1-68

REVISIONS

12-22-69 GEN.
REV.

3-12-70



DESIGNED

DRAWN
S.C.REVIEWED
E.L.

B-JKB-12.4

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

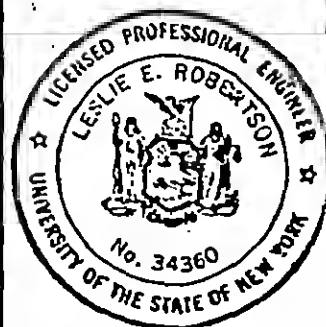
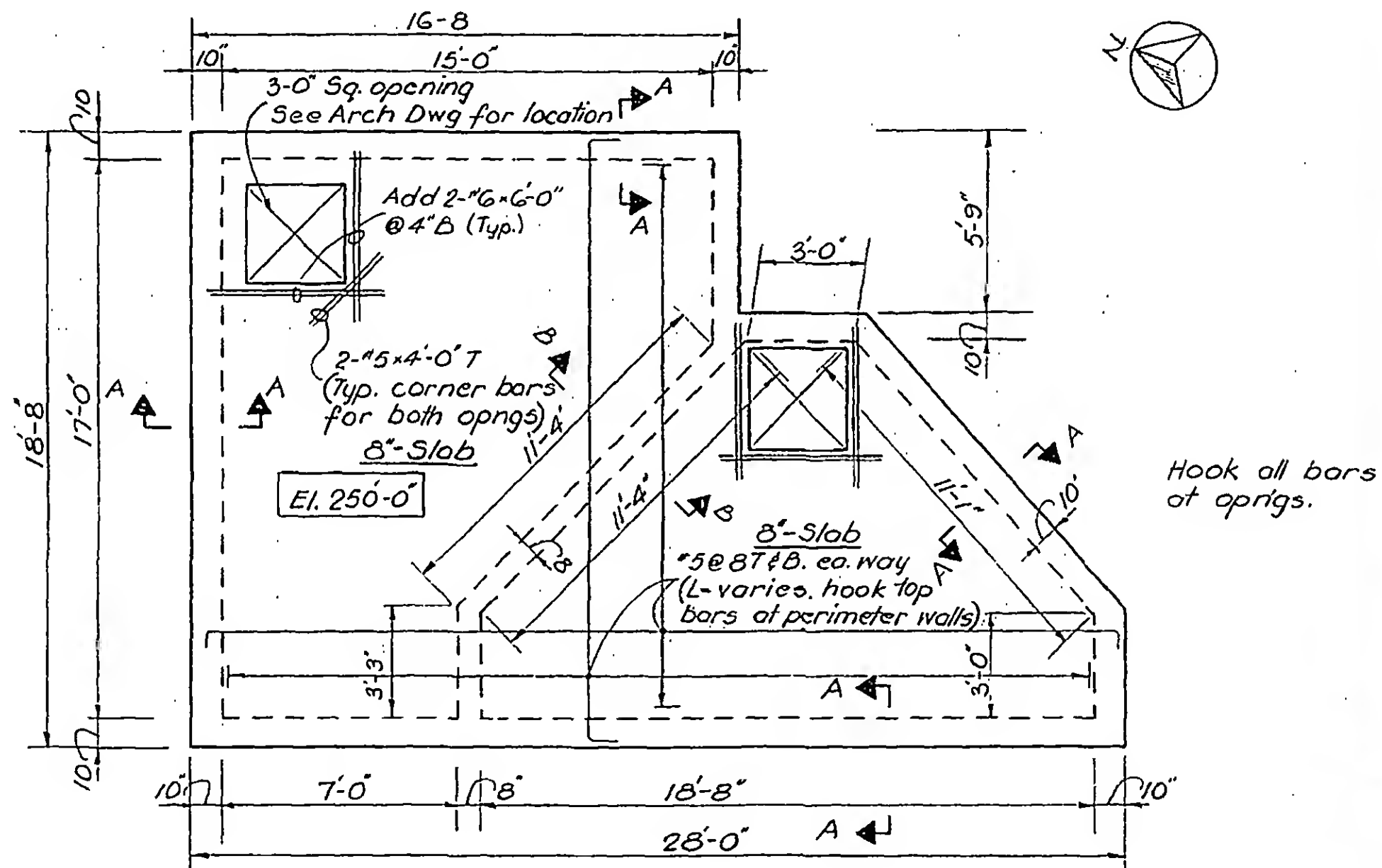
TITLE

CABLE VAULT No: 5A AND No: 5B

DATE

5-1-68

REVISIONS

10-24-69 GEN
REV.

DESIGNED

DRAWN

D.C. Huggins

REVIEWED

F1

8-JK8-12.5

Structural & Civil Engineers

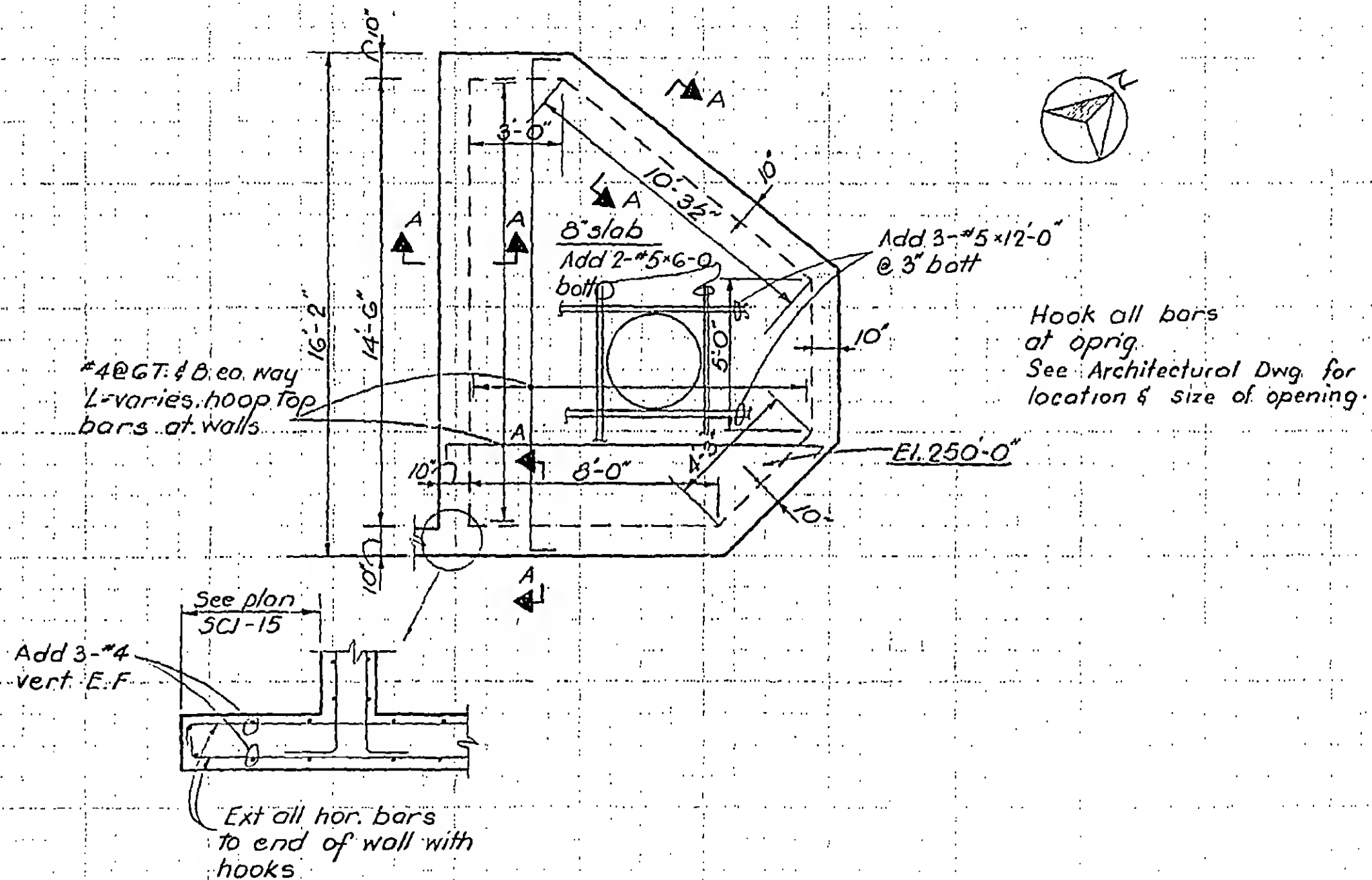
TITLE

CABLE VAULT No. 6

DATE 5-1-68.

REVISIONS

10-24-69 GEN REV



DESIGNED

DRAWN
C. Huggins

REVIEWED

73

8-JK8-12.6

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Structural & Civil Engineers

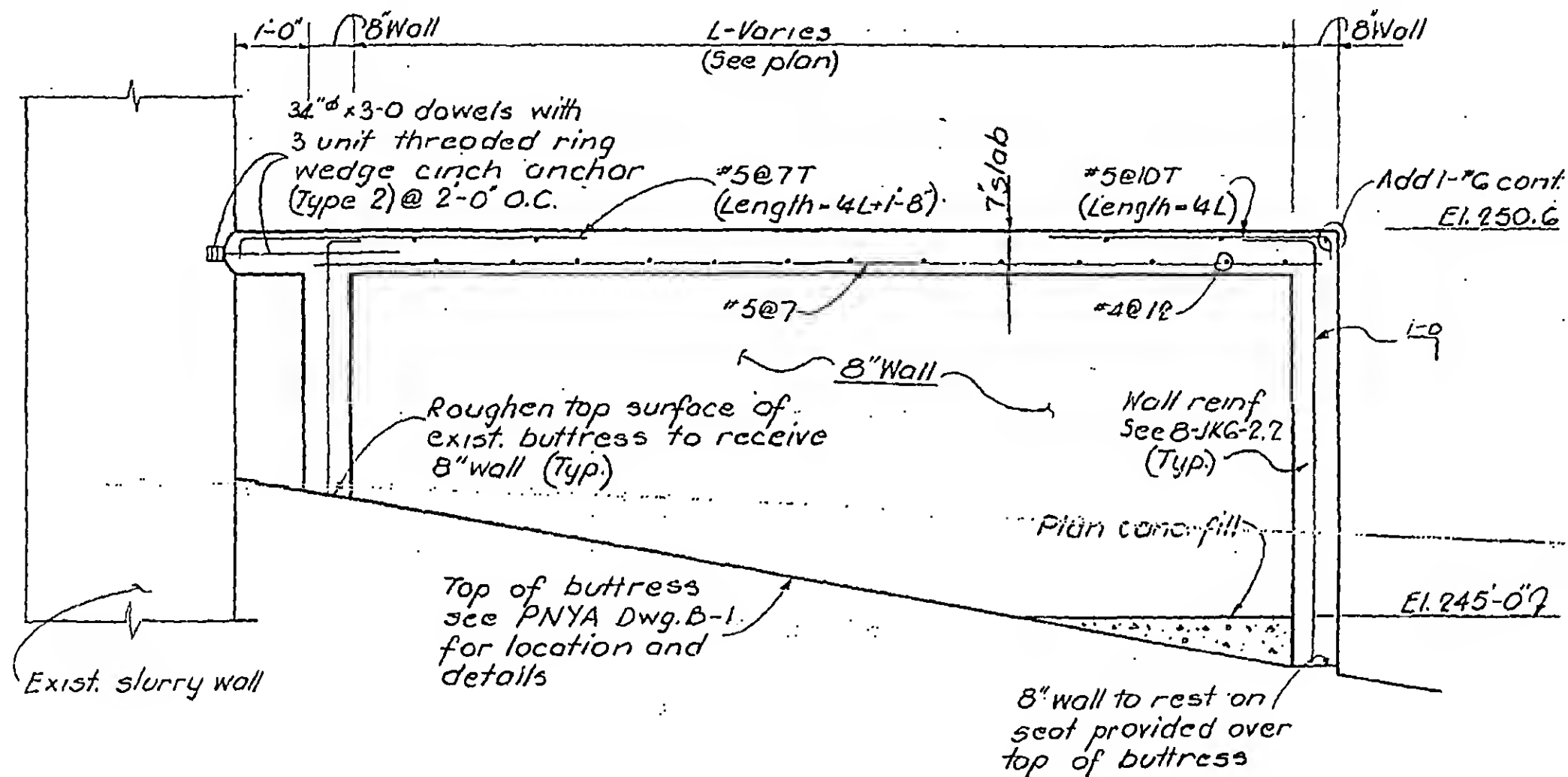
PROJECT THE WORLD TRADE CENTRE

TITLE

CABLE VAULT No. 7

DATE 5-1-68

REVISIONS

10-24-69 GEN.
REV.

DESIGNED

DRAWN

D.C. Huggins

REVIEWED

E.L.

B-JK8-12.7

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

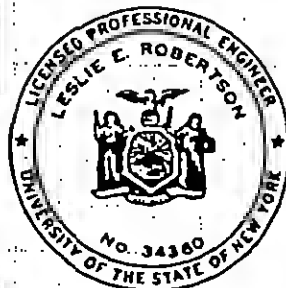
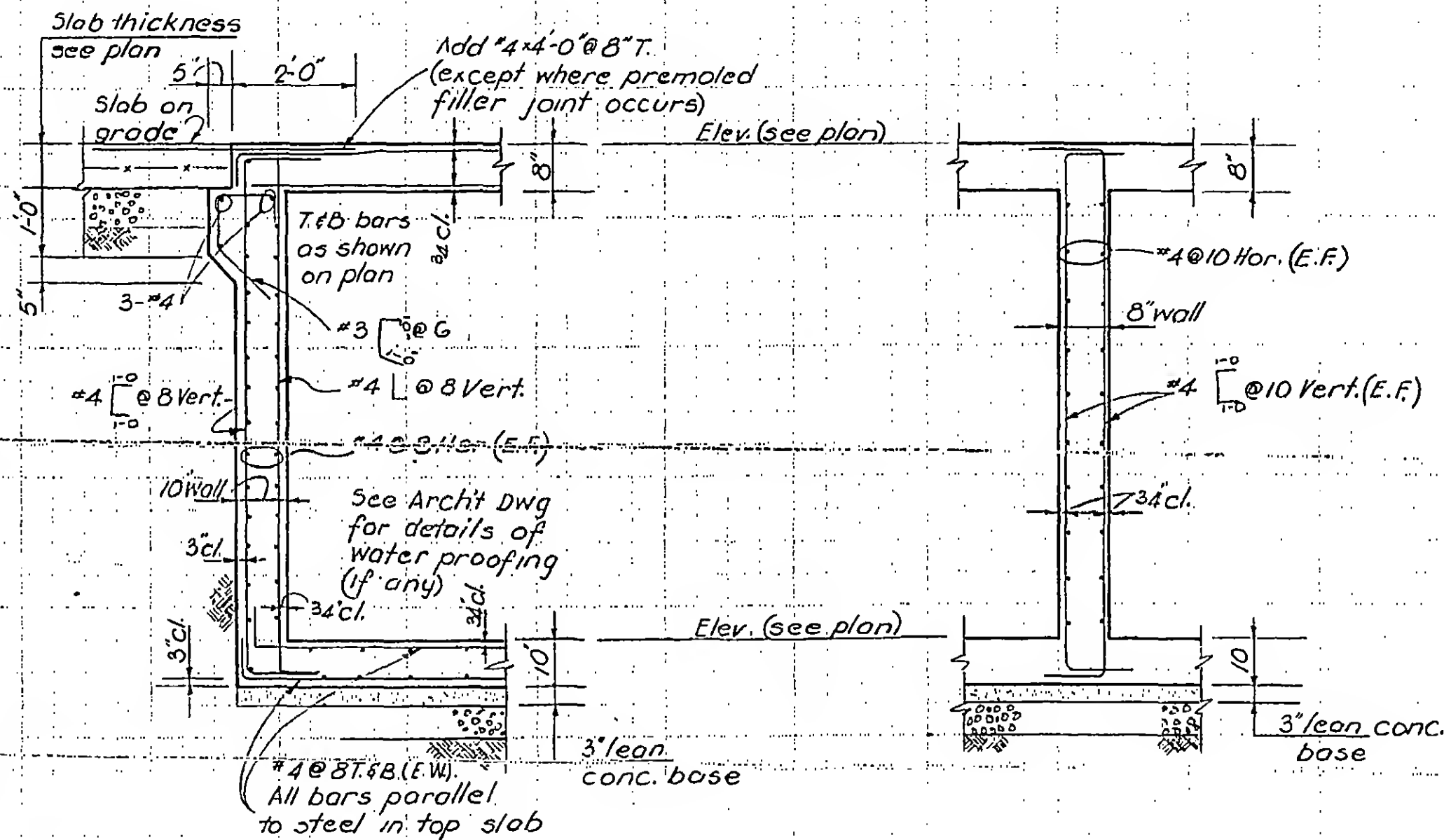
PROJECT THE WORLD TRADE CENTER

TITLE

CABLE VAULT DETAILS

DATE 10-24-69

REVISIONS



DESIGNED

DRAWN
D.C. Higgins

REVIEWED

E.L.

8-JK8-12.8

Structural & Civil Engineers

| | |
|-------|---------------------|
| TITLE | CABLE VAULT DETAILS |
|-------|---------------------|

DATE 12-22-69

Hand-drawn cross-section diagram of a vertical wall structure. The wall is 10 feet thick. The top is labeled "7' slab" and "T & B reinf. see Plan". The top edge is at "El. 250'-0\"". The bottom is at "El. 242'-6\"", with a 10-foot height dimension. Reinforcement includes #4 @ B.H. (E.F.) and #4 @ B.V. (E.F.). Spacing is indicated as 2' cl. and 3 1/2' cl. The base is shown with a hatched area representing a foundation or ground level.

Section C-C
(1/2" = 1'-0")



DESIGNED

DRAWN

S.C.

REVIEWED

E.L.

8-JK8-12.9

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

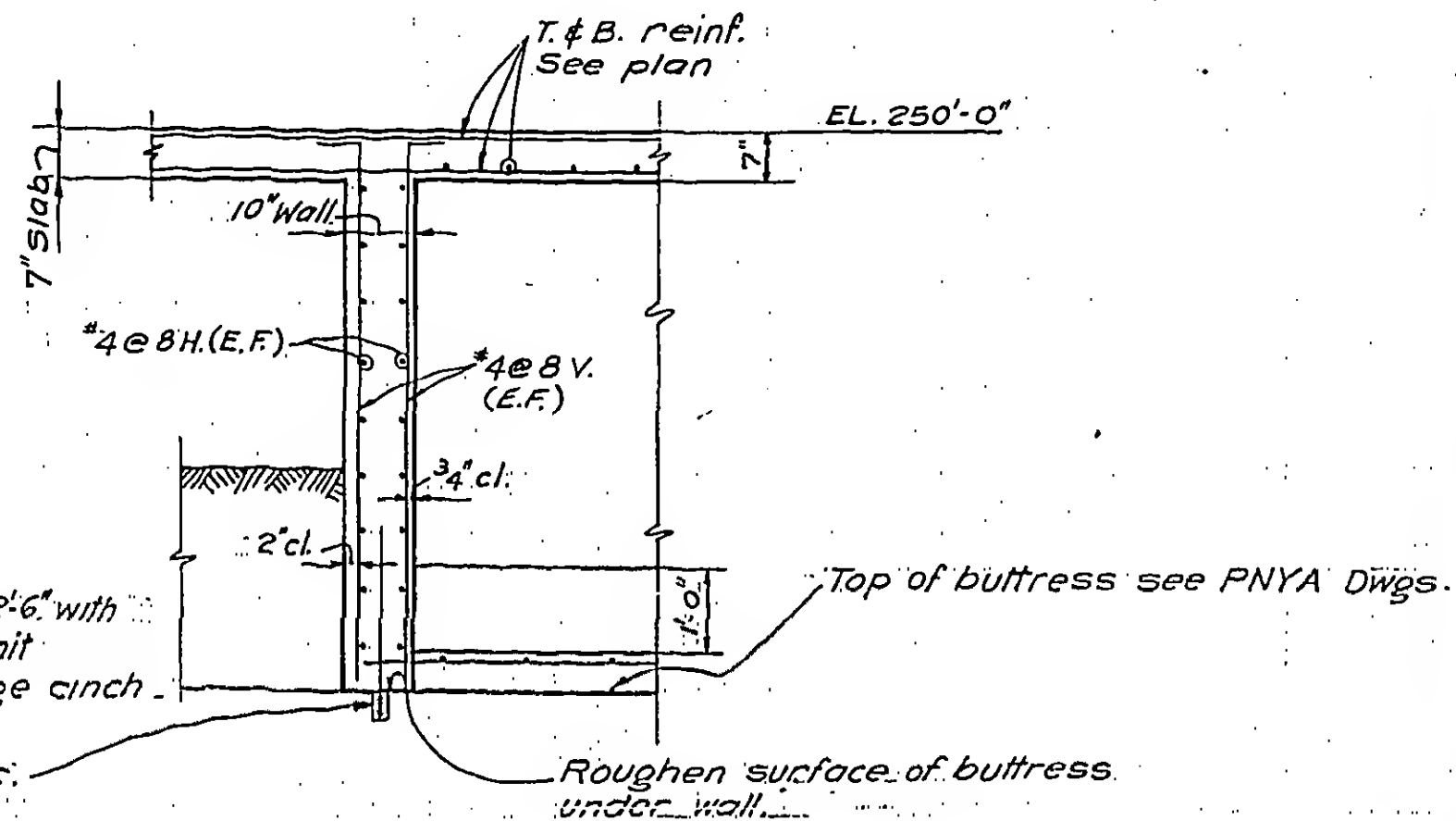
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE CABLE VAULT DETAILS

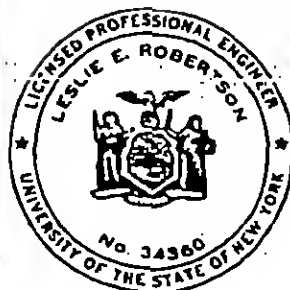
DATE 3-4-70

REVISIONS



Section D-D

(1/2" = 1'-0")



DESIGNED

K.H.

DRAWN

V.H.A.

REVIEWED

E.L.

8-JK8-12.10

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

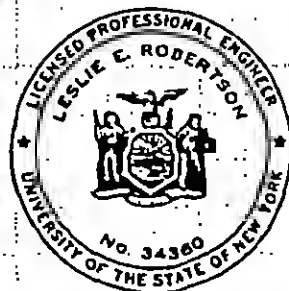
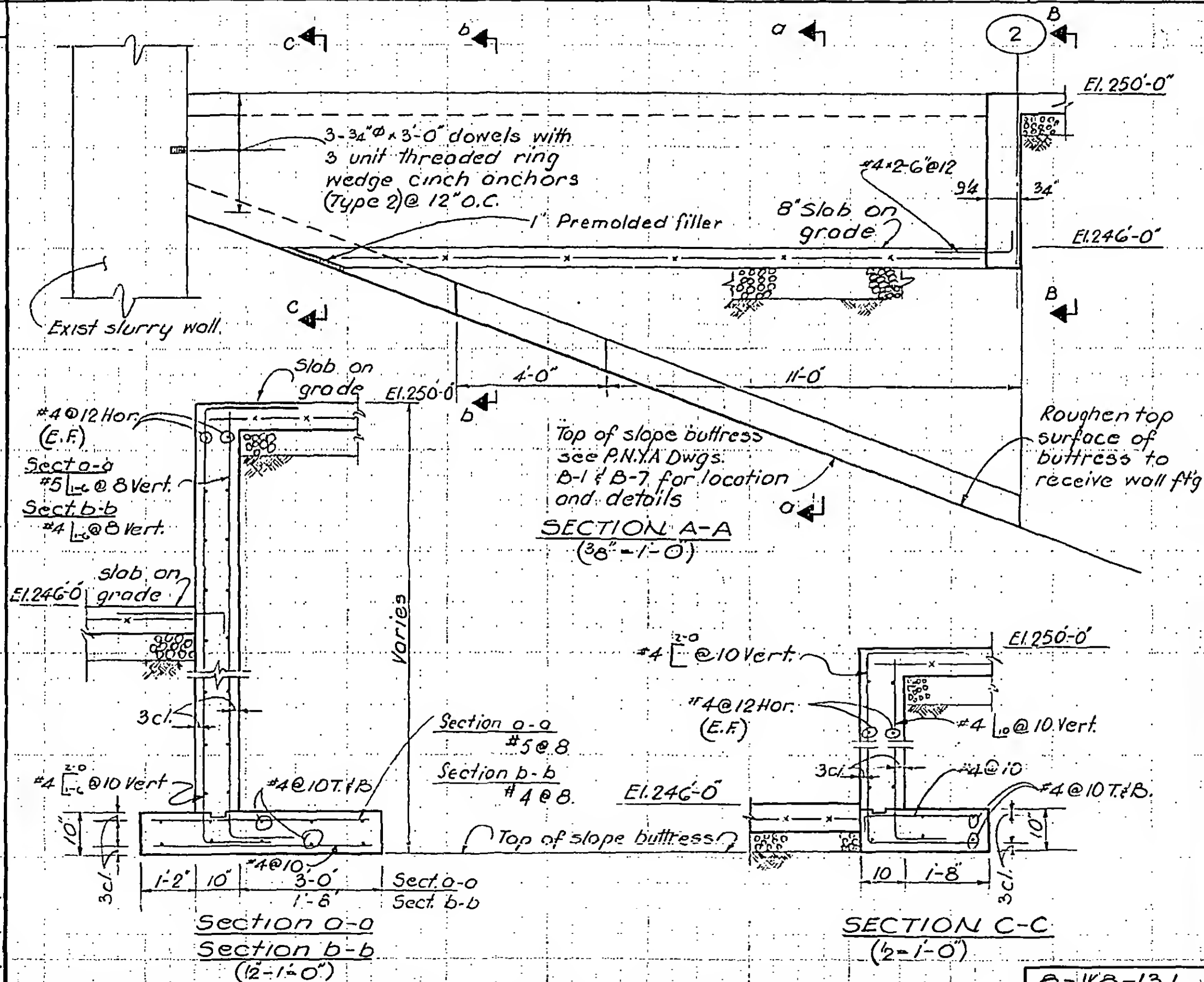
PROJECT THE WORLD TRADE CENTER

TITLE

SECTIONS

DATE 10-24-69

REVISIONS



DESIGNED

DRAWN

D.C. Huggins

REVIEWED

E.L.

B-JKB-13.1

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE

SECTIONS

DATE 10-24-69

REVISIONS

Edge of conc.
encasement for
conduits

El. 250'-0"

El. 246'-0"

J-2
22

W9922.75

9'-4"

A

10'

4'-6"

SECTION B-B (STRETCHED)
(1/2" = 1'-0")See plan for exact
layout of this face.Edge of conc.
encasement for
conduits

9"

Butt hooks
against steel
col.

#4 @ 10 hor.

3" cl.

10" Wall

#4 @ 10 Vert.
(E.F.)#4 @ 10 Vert.
(E.F.)Section a-a
(1/2" = 1'-0")

8-JK8-13.2



DESIGNED

DRAWN

D.C. Huggins.

REVIEWED

E.L.

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

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PROJECT THE WORLD TRADE CENTER

TITLE

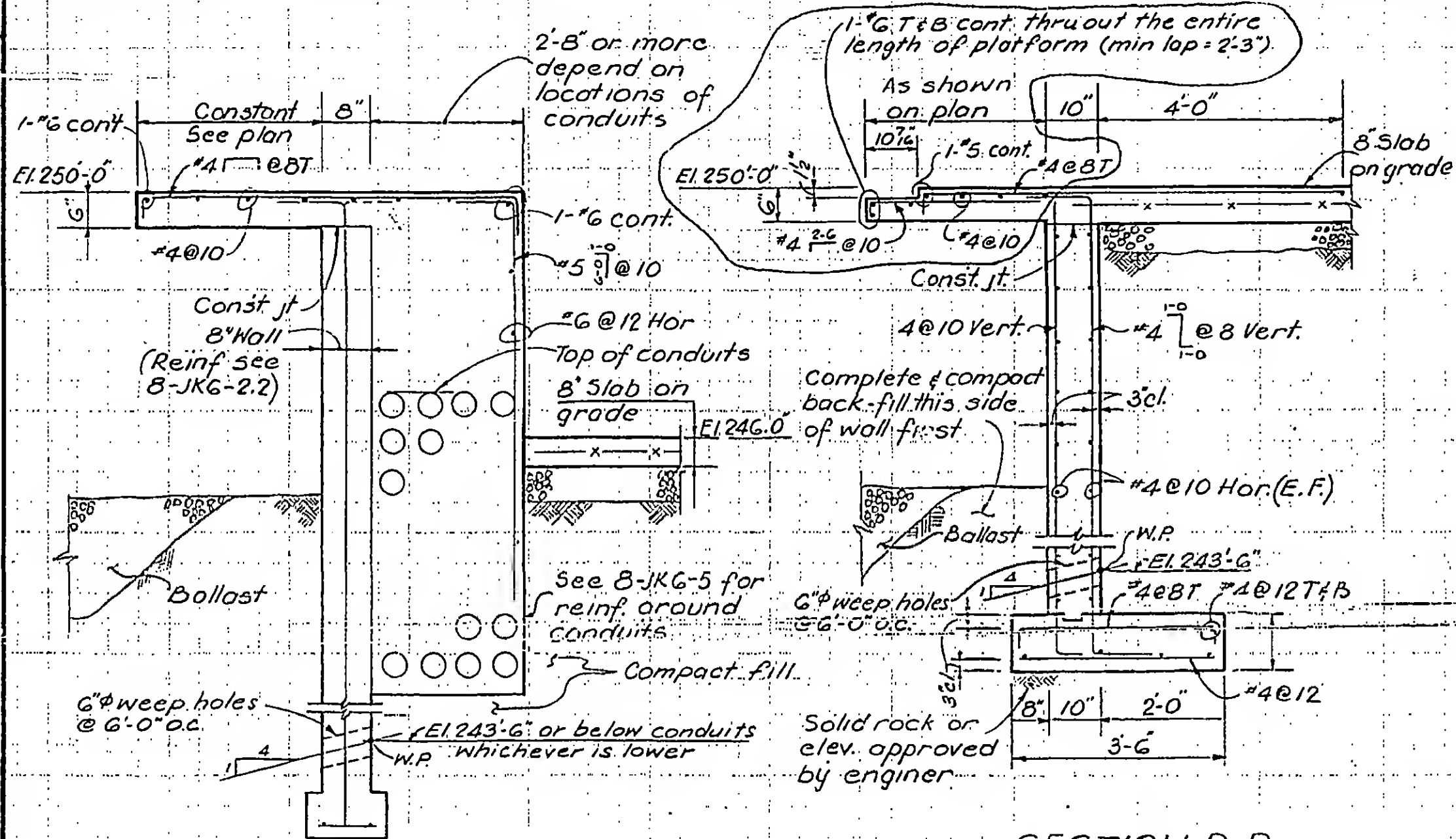
SECTIONS

DATE 10-24-69

REVISIONS

11-7-69

12-10-69

SECTION C-C
(b' = 1'-0")SECTION D-D
(b' = 1'-0")

DESIGNED

DRAWN

D. C. Huggins

REVIEWED

E. L.

8-JK8-13.3

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

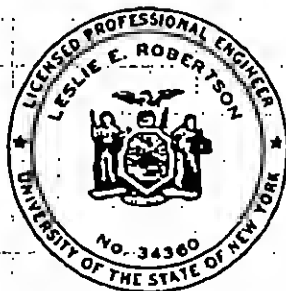
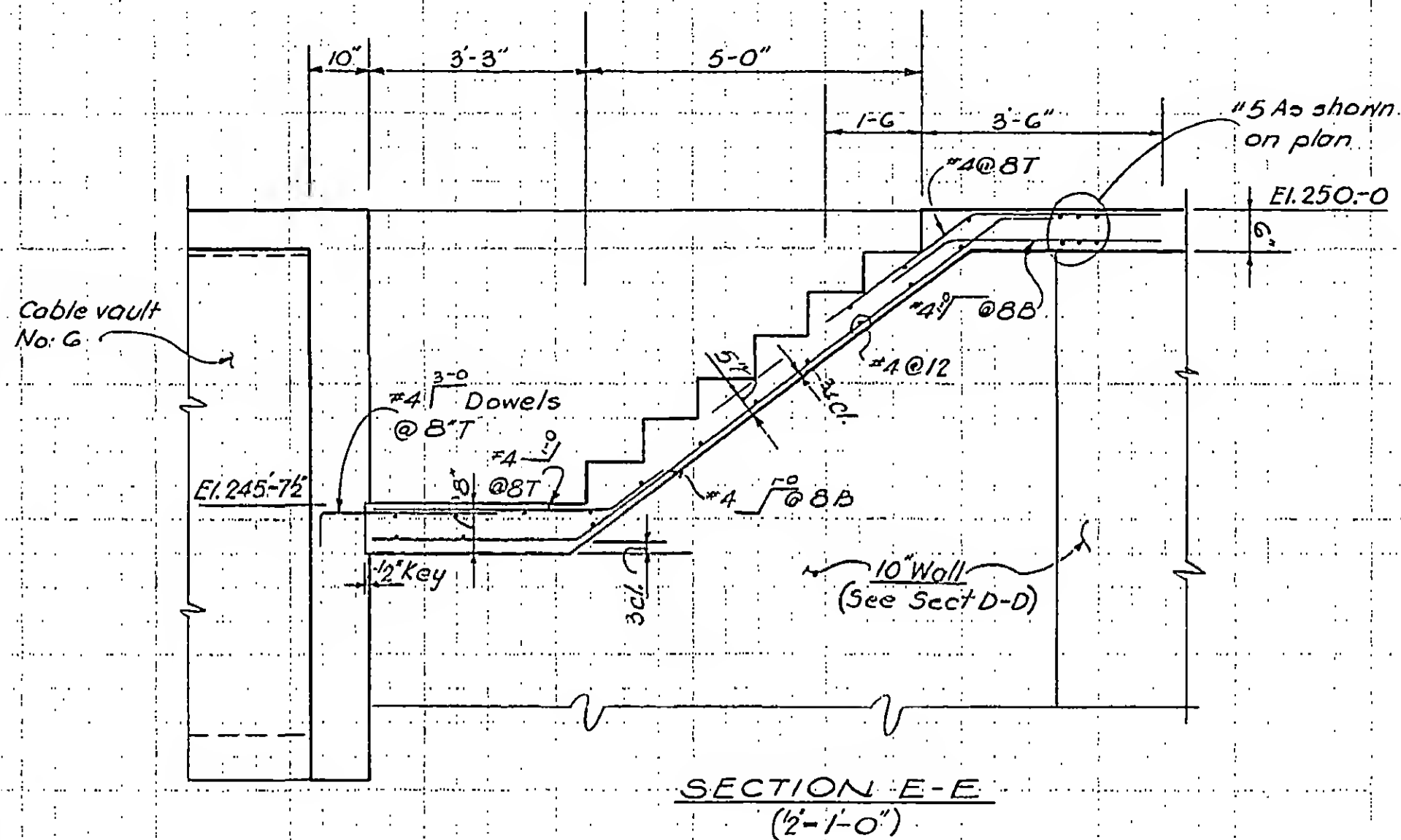
PROJECT THE WORLD TRADE CENTER

TITLE

SECTIONS

DATE 10-24-69

REVISIONS



DESIGNED

DRAWN

D.C. Huggins

REVIEWED

E.L.

8-JK8-13.4

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

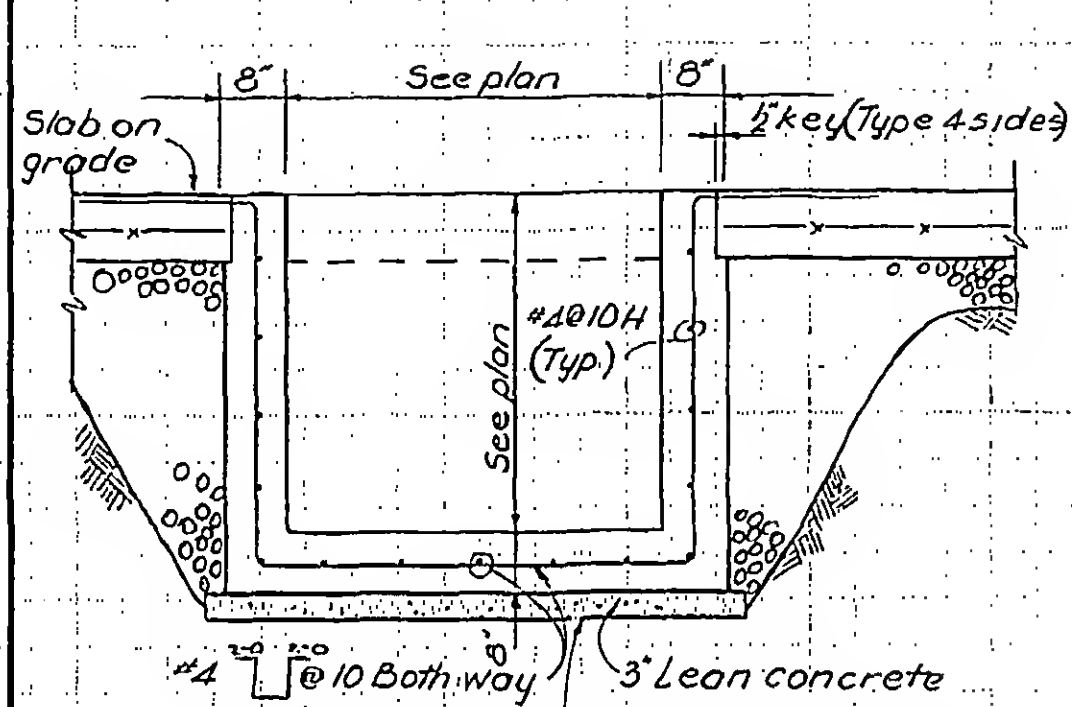
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER TITLE

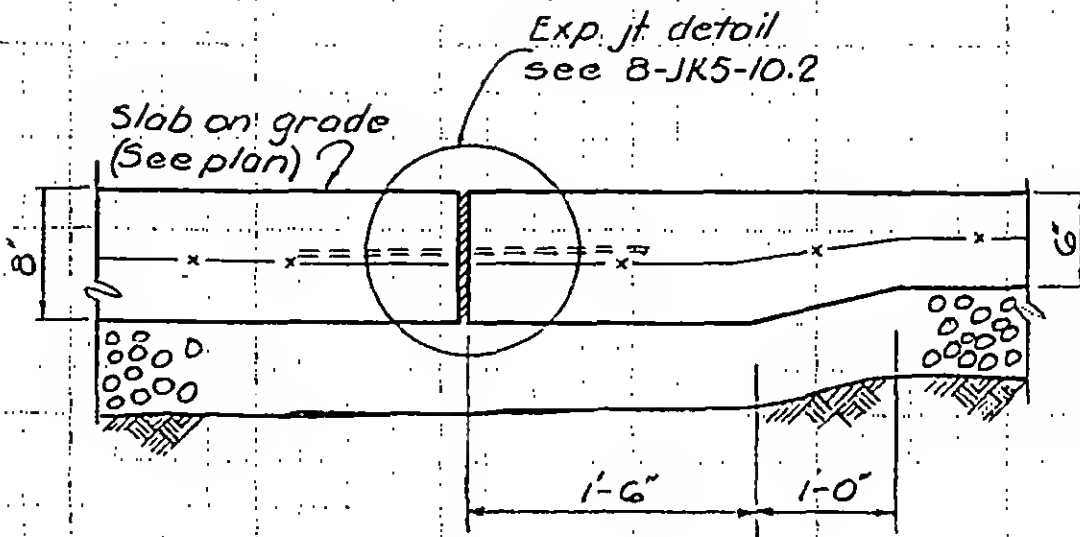
SECTIONS

DATE 10-24-69

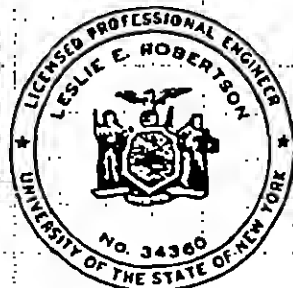
REVISIONS



SECTION F-F
(1/2" = 1'-0")



SECTION G-G
(1" = 1'-0")



DESIGNED

DRAWN D.C. Huggins

REVIEWED

E.L.

8-JK8-13.5

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

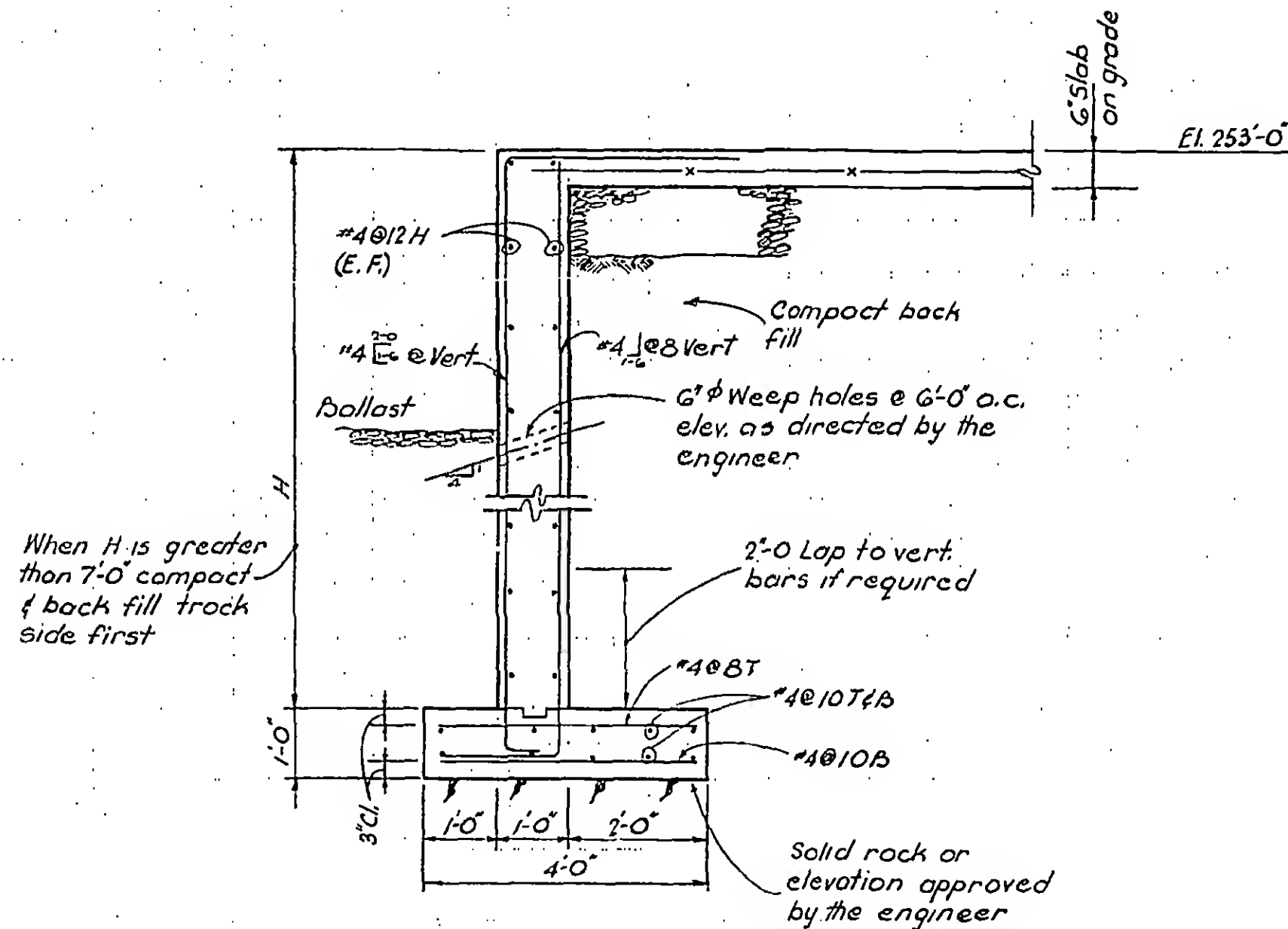
PROJECT THE WORLD TRADE CENTER

TITLE

SECTIONS

DATE 1-9-70

REVISIONS



SECTION H-H

(1/2" = 1'-0")



DESIGNED

DRAWN

D.C. Huggins

REVIEWED

E.L.

8-JK8-13.6

Structural & Civil Engineers

TITLE NORTH SPLICE CHAMBER DETAIL

DATE 5-1-68

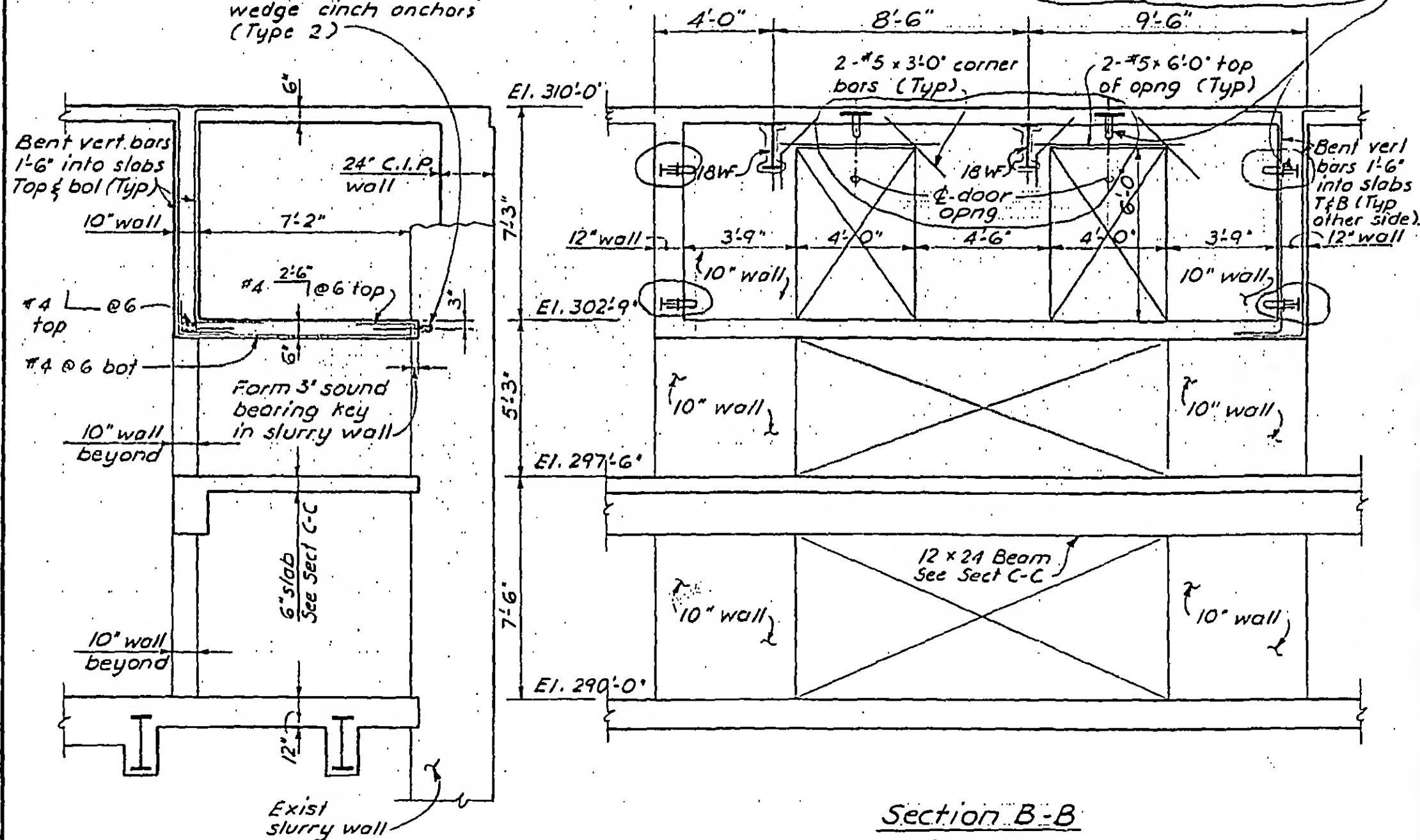
REVISIONS

7-8-69 GEN.
REV.

9-12-69

58" x 2'-6" @ 1'-0" dowels.
w/ 2 unit threaded ring
wedge cinch anchors
(Type 2)

Supply and install steel wf,
10 pulling-eyes and other
inserts. Locations as directed
by the Engineer (typ.)
(see 8-JK8-15.6 for detail)



Section B-B
(4" x 1'0")

Notes :

1. For wall reinf - See 8-JK6-2.2

Section A-A
(1/4" = 1'-0")



DESIGNED

DRAWN
F. Smith

REVIEWED
E.L.

$$8 = JK 8 = 15.1$$

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

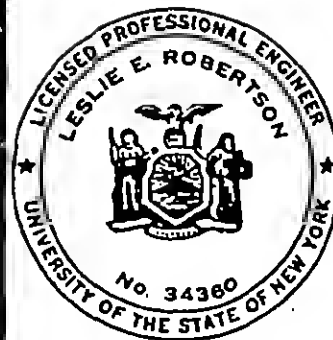
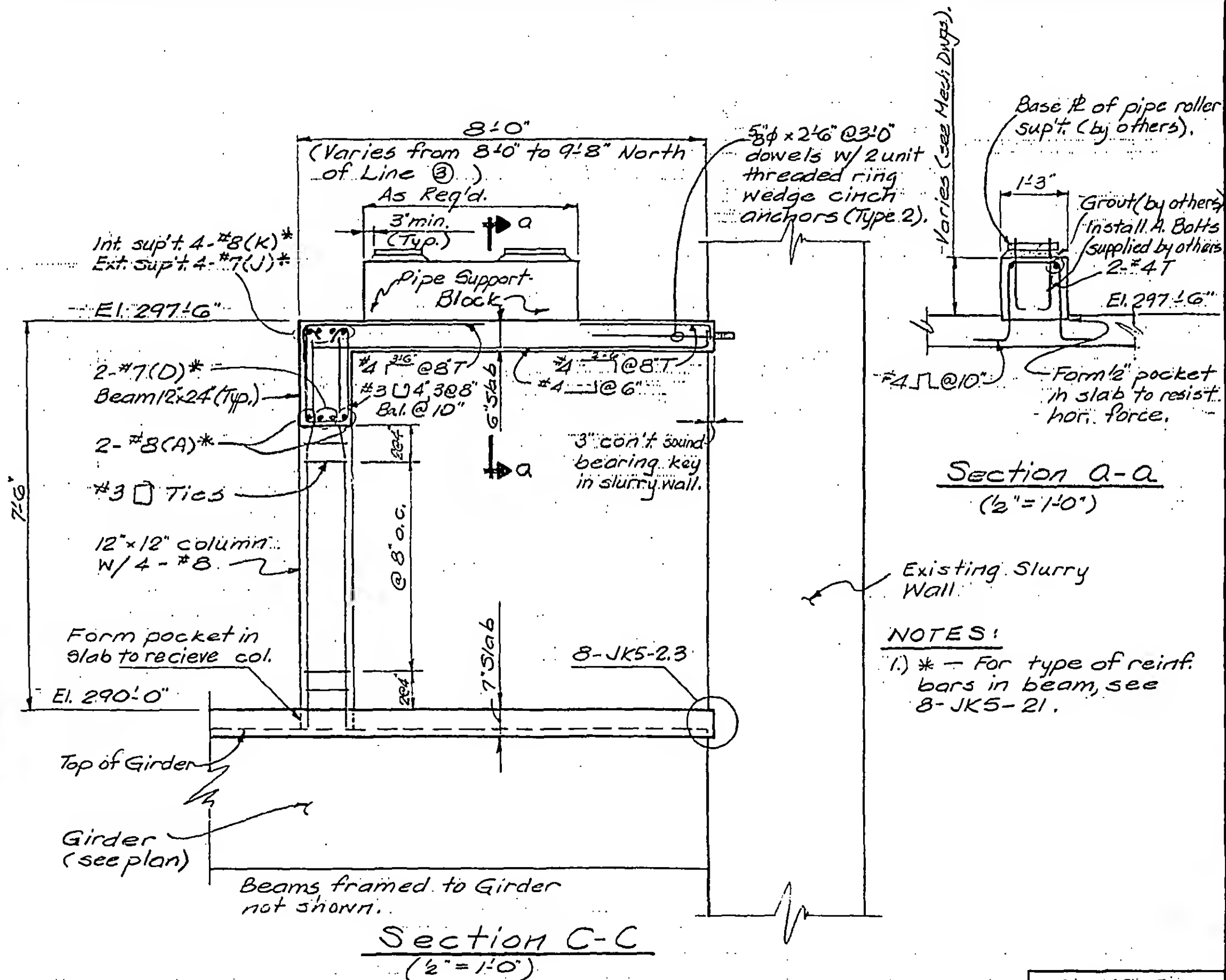
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE UTILITY RACK DETAIL

DATE 5-1-68

REVISIONS

7-8-69 GEN.
REV.

DESIGNED

DRAWN
G. Stanton

REVIEWED

E.L.

8-JK8-15.2

Structural & Civil Engineers

TITLE CENTER SPLICE CHAMBER DETAIL

DATE 5-1-68

REVISIONS

9-26-69 GEN.
REV.

5/8" x 2'-6" @ 1'-0" dowels
with 2 unit threaded
ring wedge cinch
anchors (Type 2)

Supply and install steel WF
10 pulling eyes and other
inserts. Locations as directed
by the Engineer (typ.)
(See 8-JR8-15.6 for detail)

2-#5 x 3'-0" corner bars (typ.) (2-#5 x 6'-0" top of opng. (typ.)

(2'-5" x 6'-0" top
of opng. (typ))

Bent vert. bars
1/6" into slabs
T & B (typ.) ←

24" C.I.P.
wall

-10 wall-

7-2

#4L CG-
top

#4 ^{2.6} 766 top.

426 box

Form 3" sound
bearing key
in slurry wall

10" wall
beyond

65/06

10" wall
beyond

Exist. slurry wall

Section D-D
= (4" = 1'-0")

∴ Notes:

1. For wall reinf see 8-JK6-2.2

Section E-E
($\frac{1}{4}'' = 1'-0''$)



DESIGNED

□月△號

J. Adams

REVIEWER

E.L.

8-JKB-15,3

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

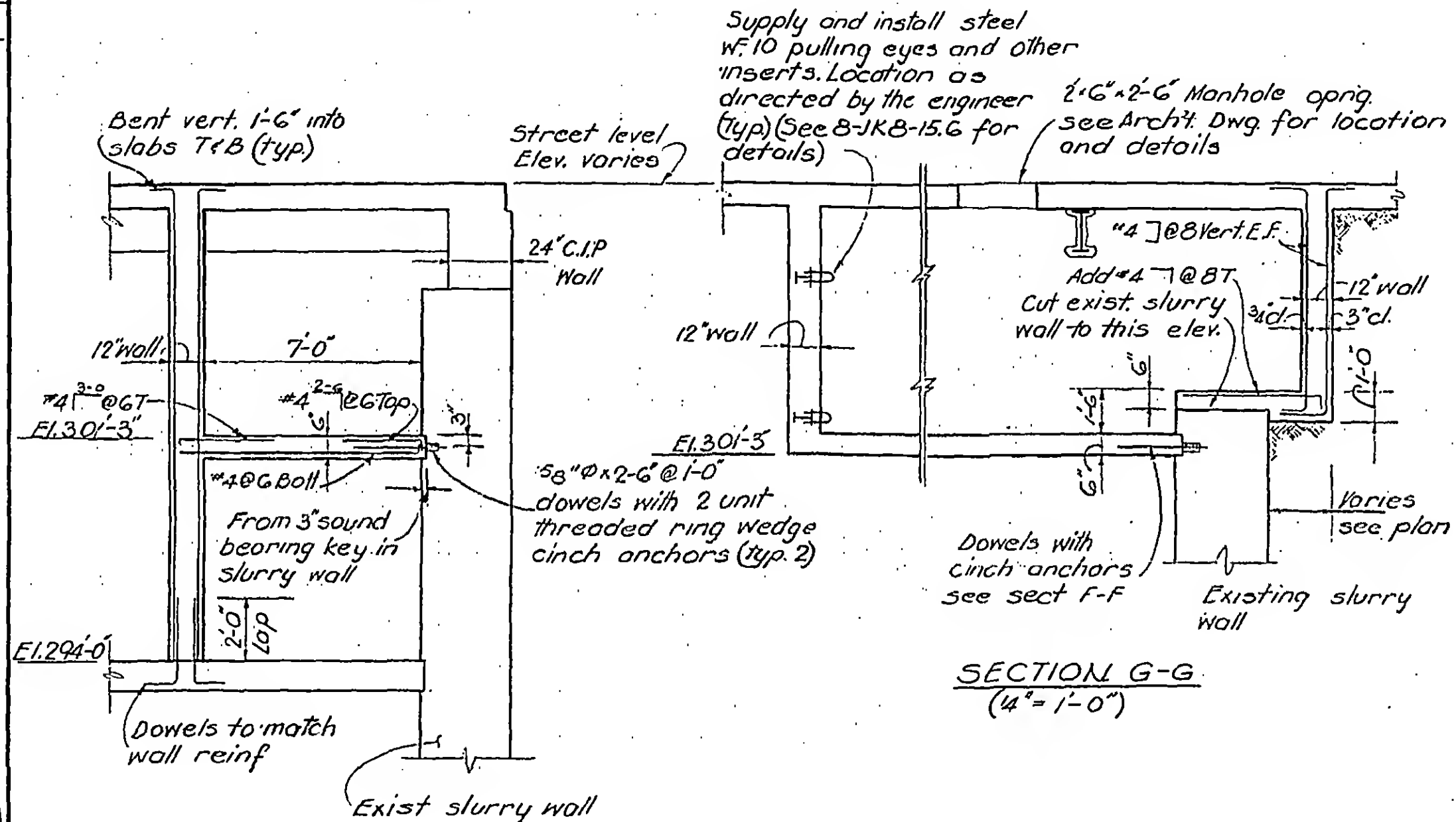
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE SOUTH SPLICING CHAMBER DETAIL

DATE 5-1-68

REVISIONS

10-28-69 GEN.
REV.SECTION F-F
(4" = 1'-0")

NOTES:-

1. For wall reinf. see 8-JK6-2.2



DESIGNED

DRAWN

D. Huggins

REVIEWED

E.L.

8-JK8-15.4

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

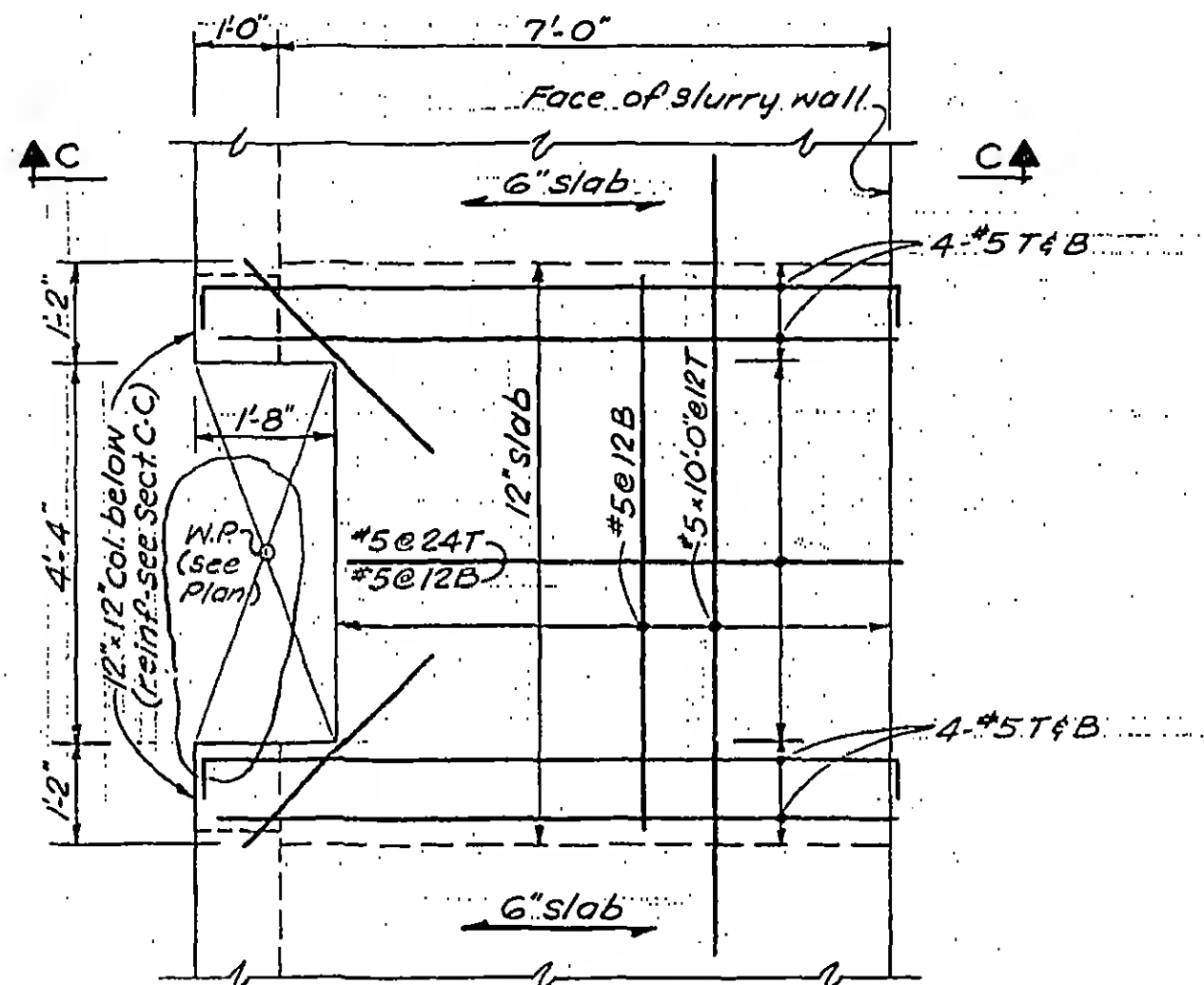
TITLE

UTILITY RACK DETAIL

DATE 7-23-69

REVISIONS

12-15-69



Part Plan of Utility Rack
At Pull & Splice Chamber
(1/2" = 1'-0")



DESIGNED

DRAWN
S.C.REVIEWED
E.L.

8-JK8-15.5

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

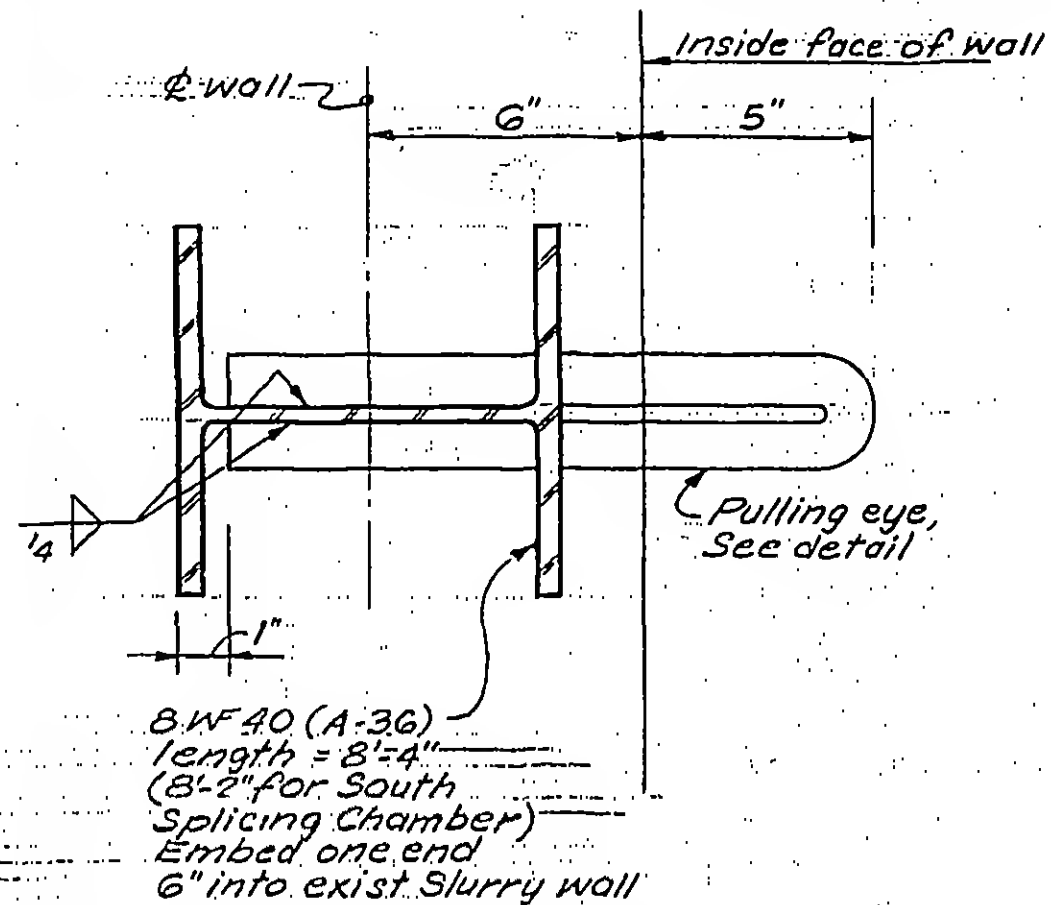
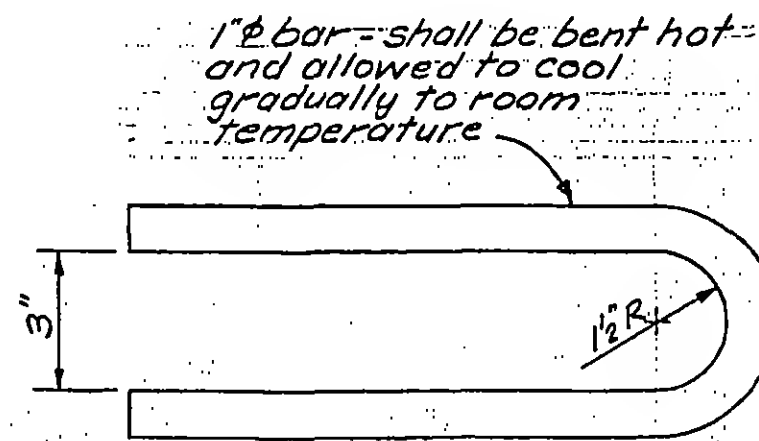
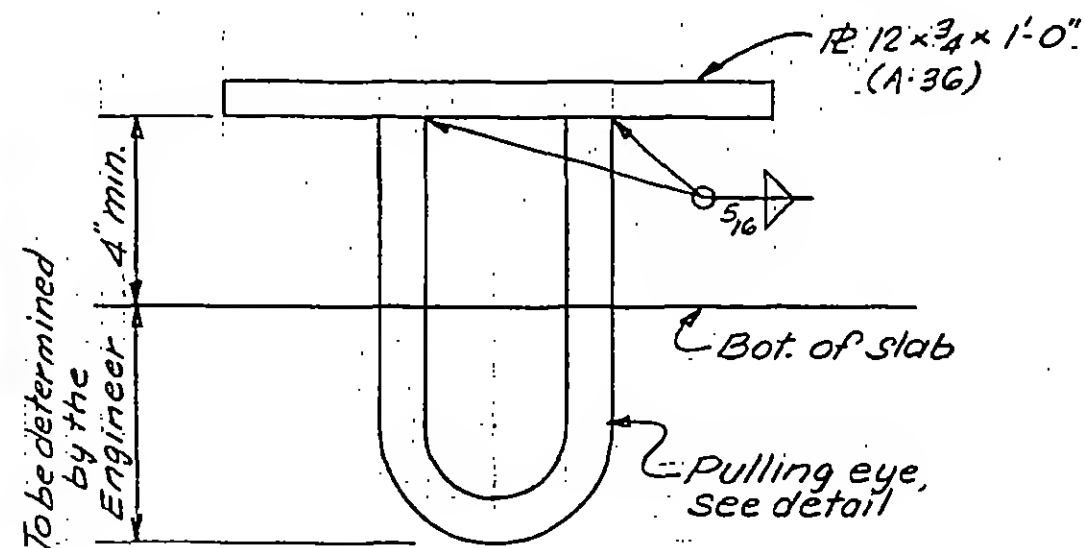
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE DETAIL OF PULLING ANCHOR IN SPLICING CHAMBER

DATE 9-12-69

REVISIONS

WALL TYPE PULLING ANCHORPULLING EYE DETAILCEILING TYPE PULLING ANCHOR

DESIGNED

DRAW
S.C.REVIEWED
E.L.

8-JK8-15.6

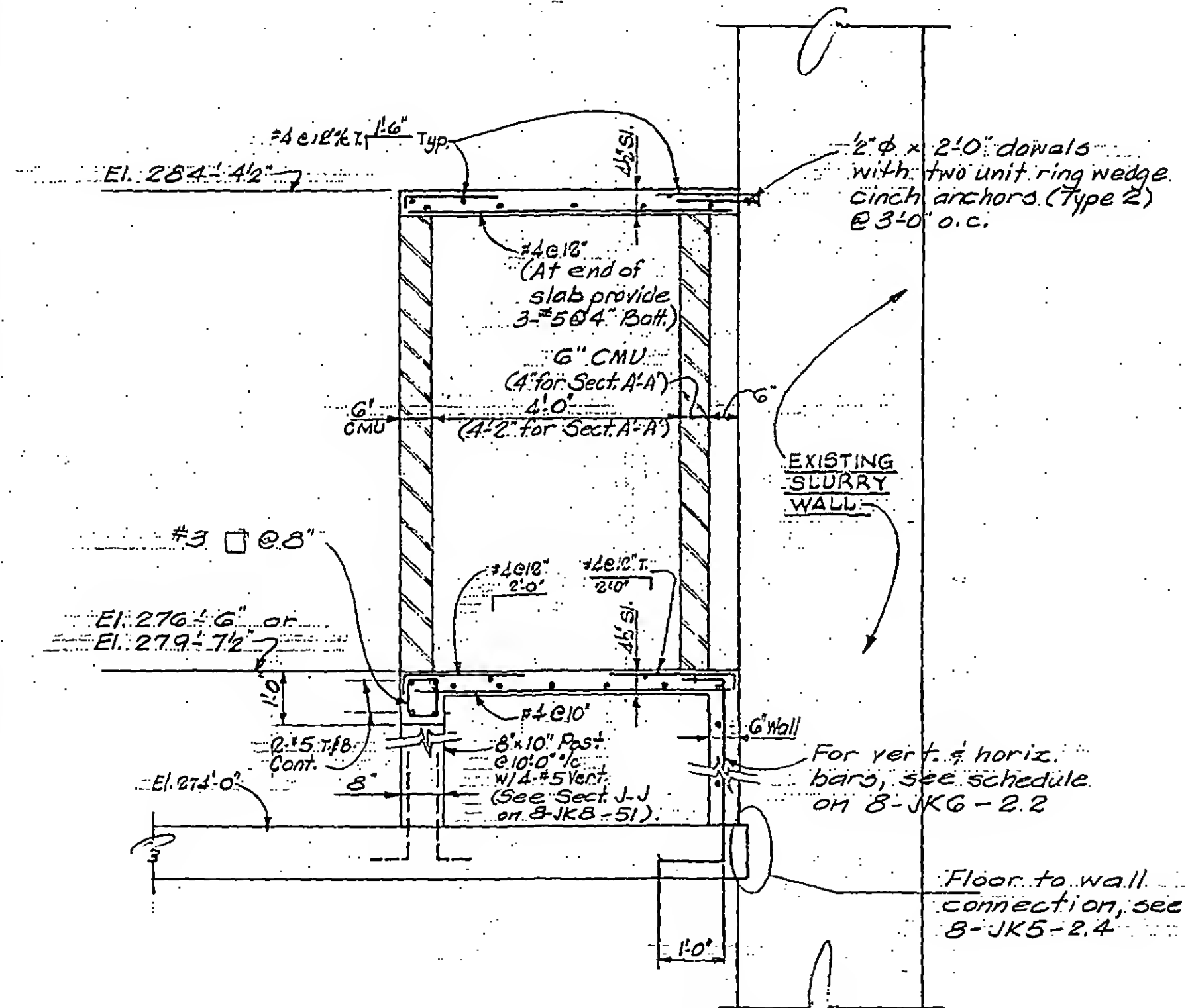
Structural & Civil Engineers.

PROJECT THE WORLD TRADE CENTER

TITLE STAIR PASSAGE SECTIONS

DATE 7-1-69

REVISIONS

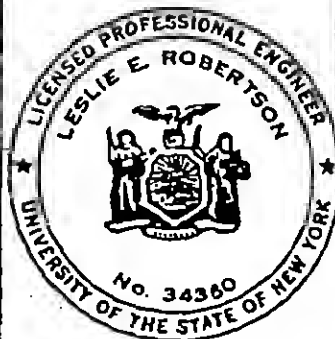


Section A-A
Section A'-A'
 $\frac{1}{2}'' = 1'-0''$

NOTES:

1. All conc. to be $f'_c = 3000$ psi
except floor at El. 274
 $f'_c = 4000$ psi.

8-JK8-17.1



SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

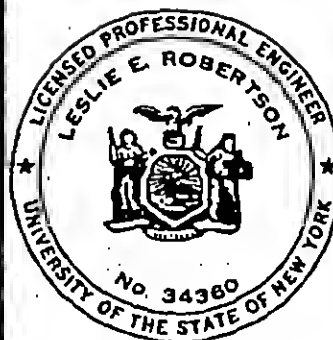
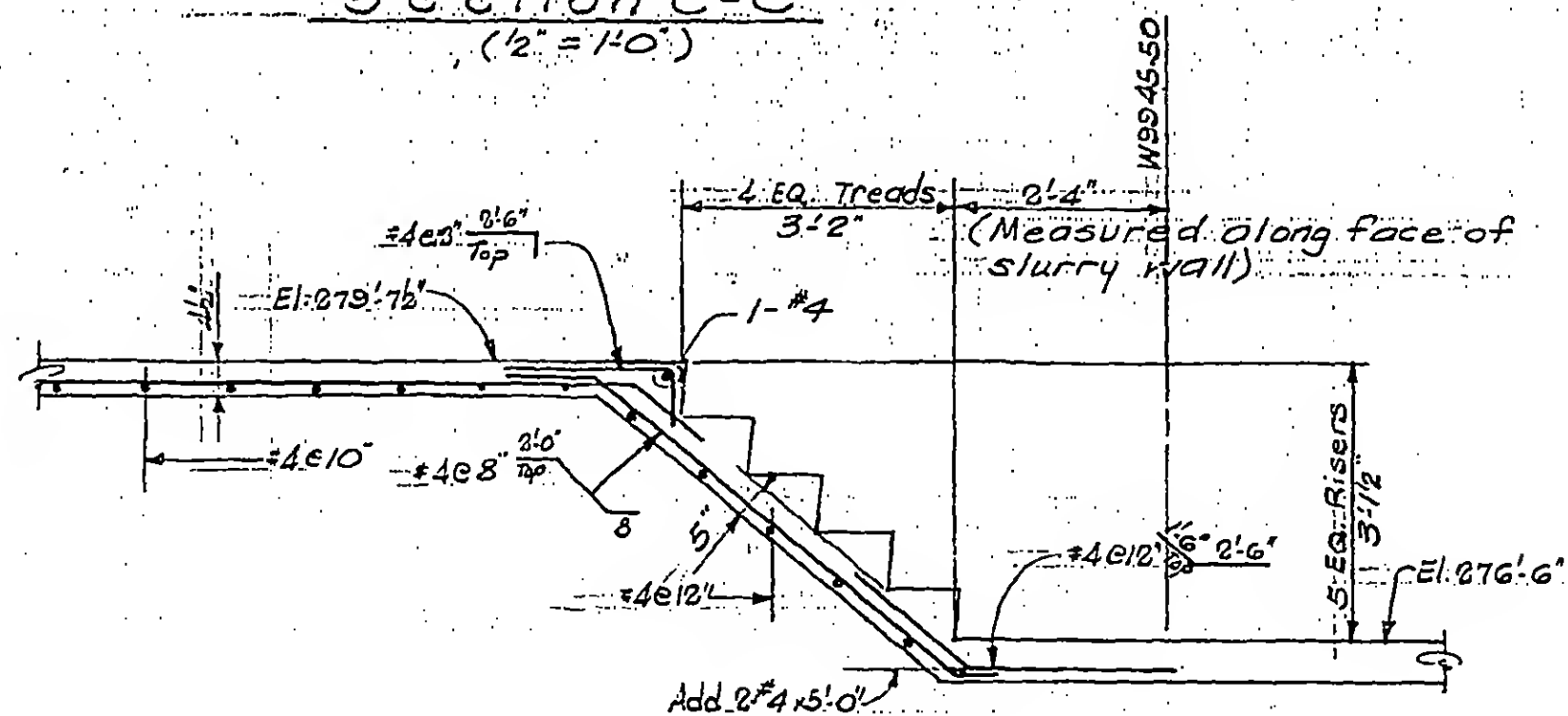
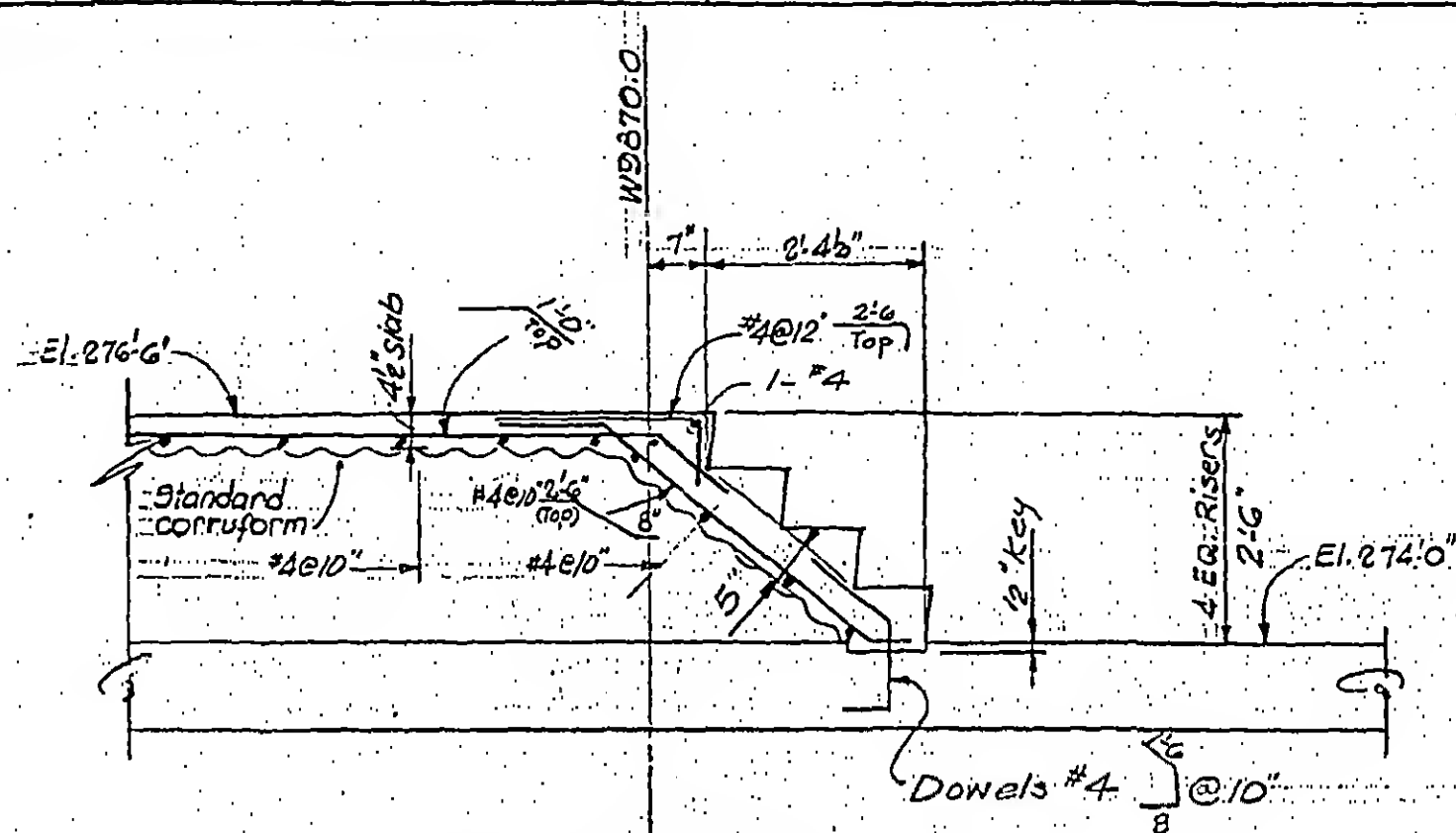
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE STAIR PASSAGE SECTIONS

DATE 7-1-69

REVISIONS



DESIGNED

DRAWN

S.T.M.

REVIEWED

E.L.

8-JK8-17.2

SKILLING, HELLE. CHRISTIANSEN, ROBERTSON.

Structural & Civil Engineers.

PROJECT

THE WORLD TRADE CENTER

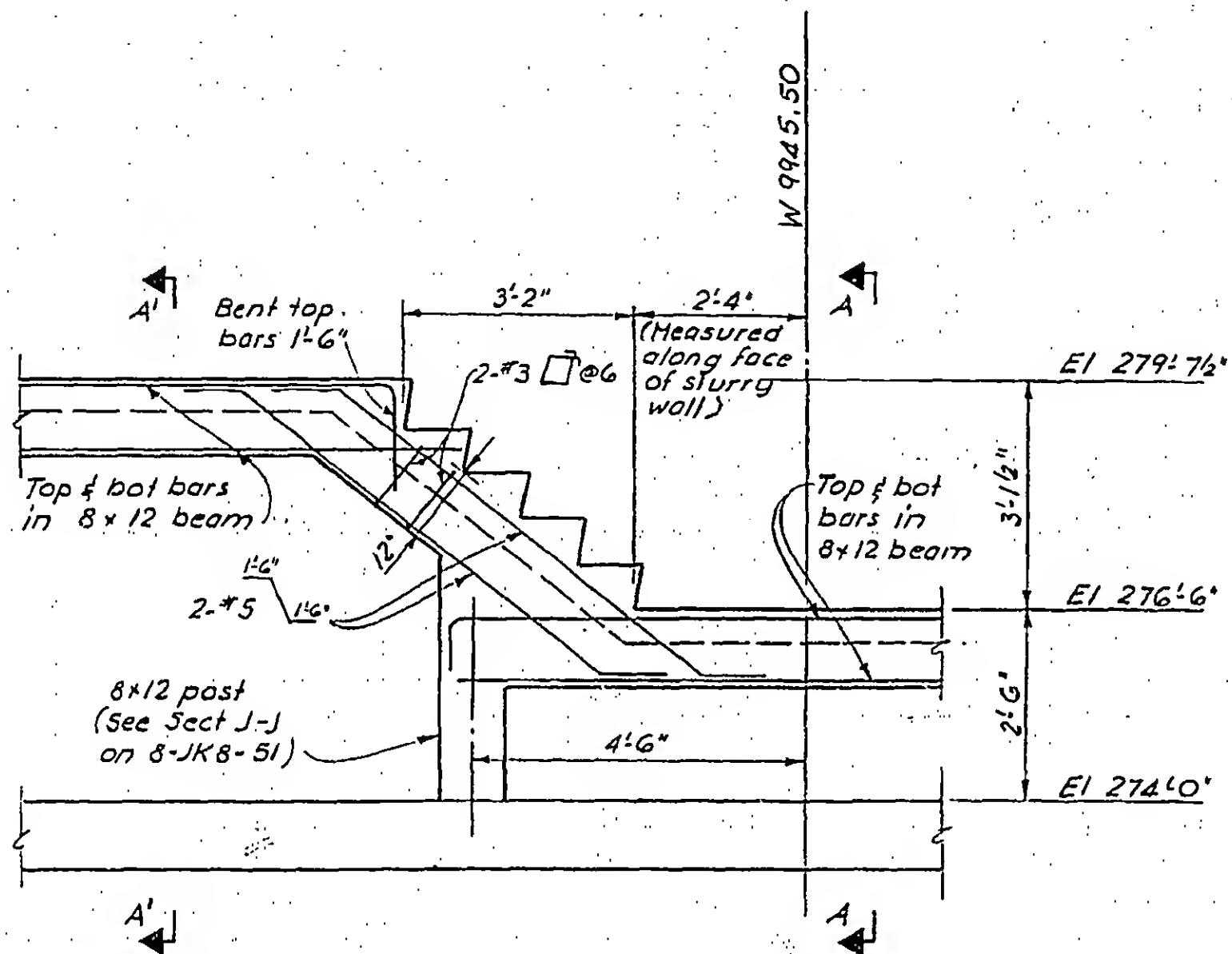
TITLE

STAIR PASSAGE SECTIONS

DATE

7-1-69

REVISIONS



Section D-D

(2'-0" - 1'-0")

DESIGNED

DRAWN

F. Smith

REVIEWED

E.L.

8-JK8-17.3

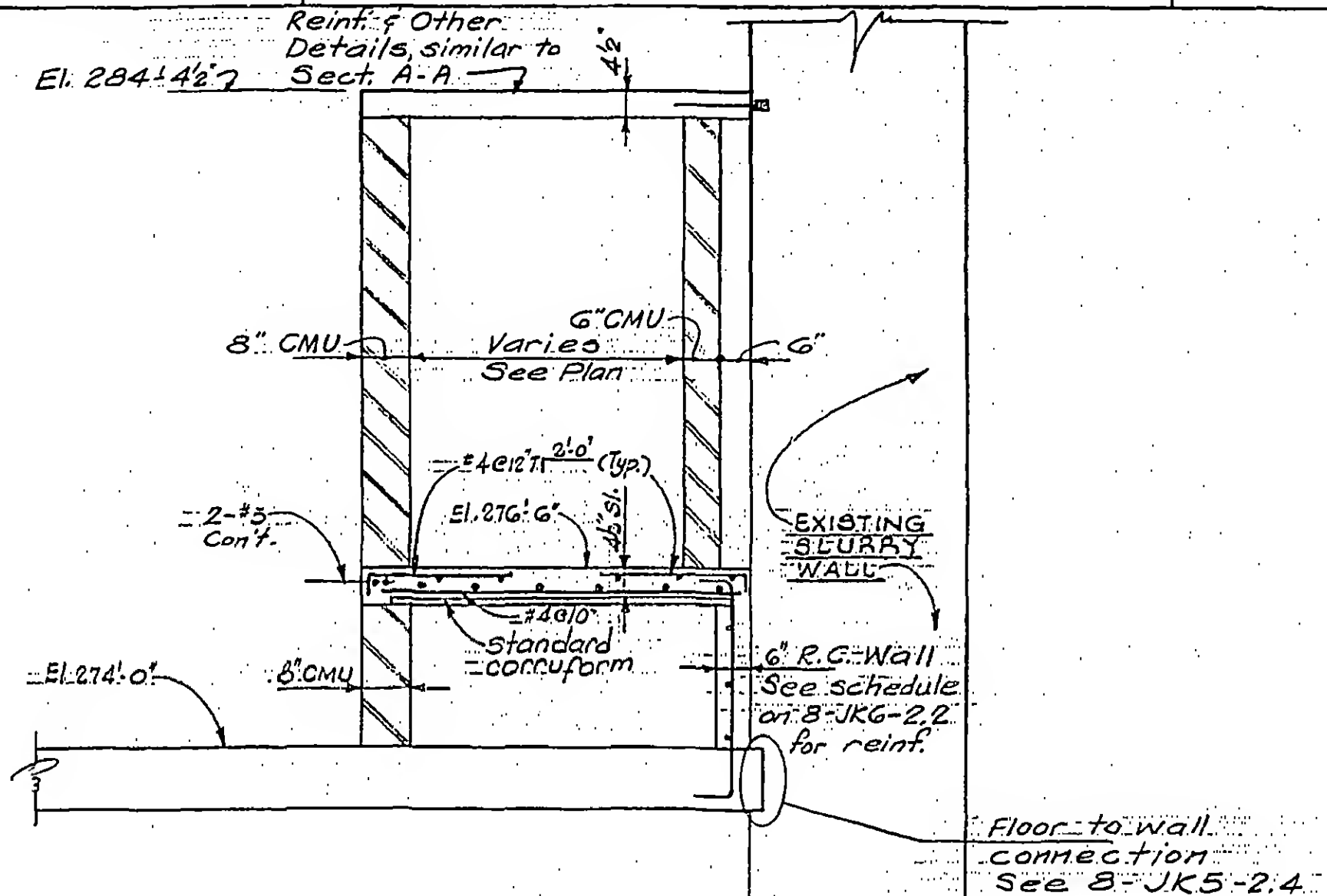
Structural & Civil Engineers

TITLE STAIR PASSAGE SECTIONS

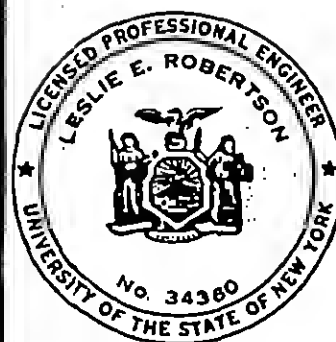
DATE 7-1-69

REVISIONS

Reinf. & Other
Details, similar to
E1. 284-4'2" Sect. A-A



Section E-E



DESIGNED

DRAWN

REVIEWED

8-JK 8-17.4

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

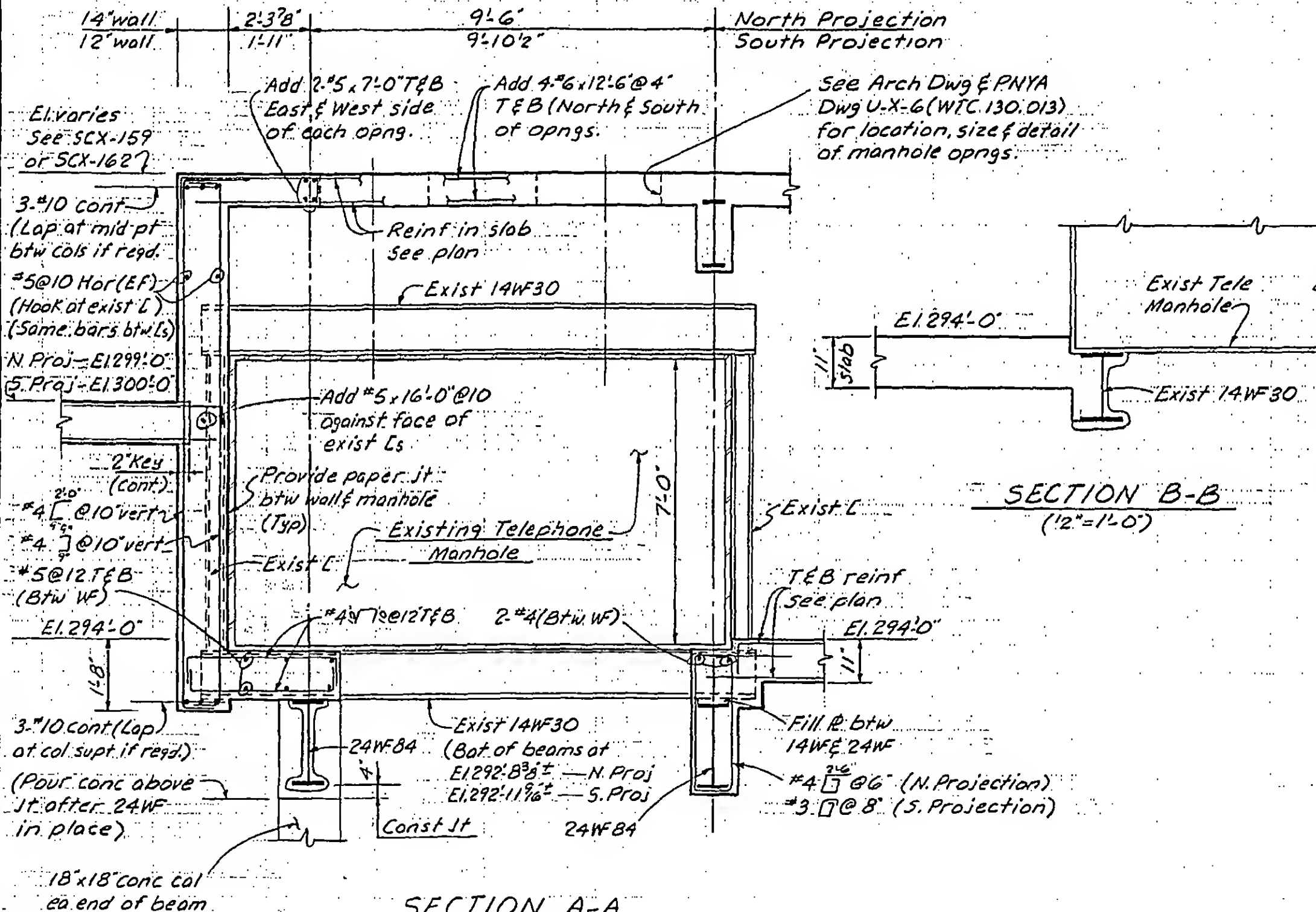
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE SECTION AT EXISTING TELEPHONE MANHOLE

DATE 5-1-68

REVISIONS

9-3-69 GEN.
REV.2-27-70 GEN.
REV.

DESIGNED

DRAWN

A.L.F.

REVIEWED

E.L.

8-JK8-19

PROJECT

THE WORLD TRADE CENTER

TITLE

TEMPORARY SHORING - NOTES

DATE

5-1-68

REVISIONS

1. Temporary shoring beams and pipe posts are to be installed prior to casting the slabs. Shoring to be adequately braced during construction and to remain in place until after the removal of the PATH Tubes.
2. Beams & connection material shall conform to ASTM A36 unless another grade is specifically noted and shall be installed in conformance with the AISC specification adopted April 17, 1963.
3. Pipe posts shall conform to ASTM A53, Type E or S, Grade B with a sulphur content not exceeding 0.05 percent or API standard 5L, Grade B seamless or electric welded pipe and shall have a minimum yield point of 35 ksi.
4. Bolts shall conform to ASTM A325 except anchor bolts at piers may conform to ASTM A307. A325 bolts shall be installed in conformance with the requirements of "Specifications for Structural Joints Using ASTM A325 or A490 Bolts" approved by Research Council on Riveted and Bolted Joints of the Engineering Foundation, Sept. 1, 1966.
5. Welding of structural steel shall conform to the requirements of the AISC specification adopted April 17, 1963 and the "Code for welding in Building Construction," D1.0-66 by the AWS.
6. Shims shall be installed between beams and slab as required to maintain bearing and shall conform to ASTM A36.
7. When shoring is removed, pipes shall be cut off at least one inch below top of slab and slab patched. Pipes shall be cut off smooth with the bottom of plates embedded in slab. Temporary connections to permanent construction shall be cut off at face of permanent construction.



8-JK8-20.1

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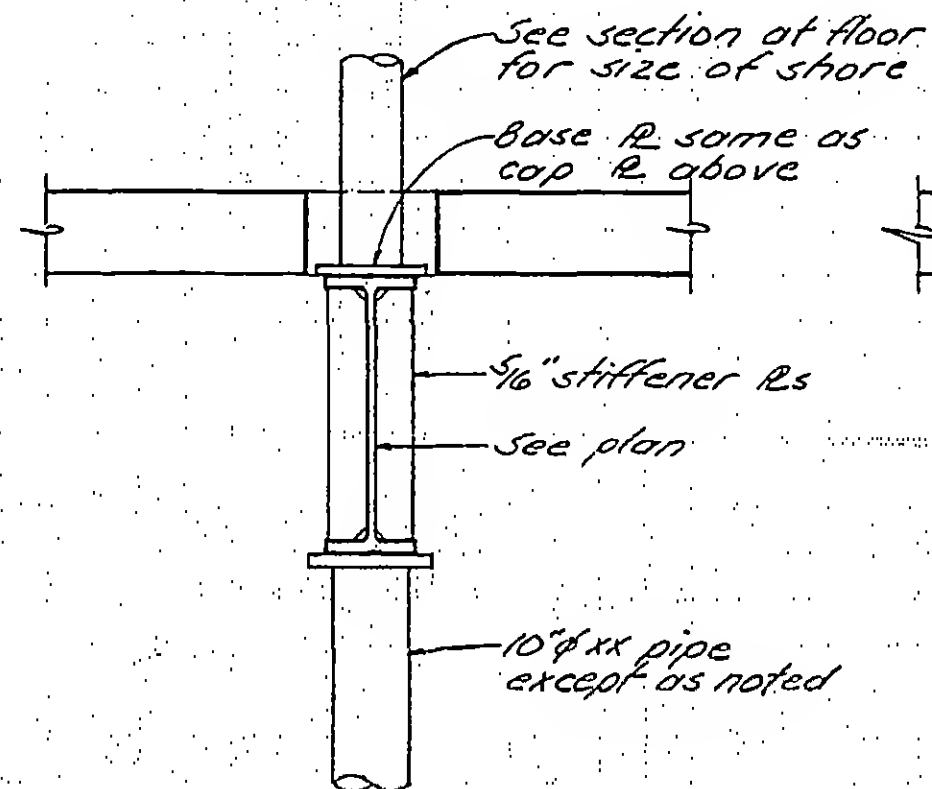
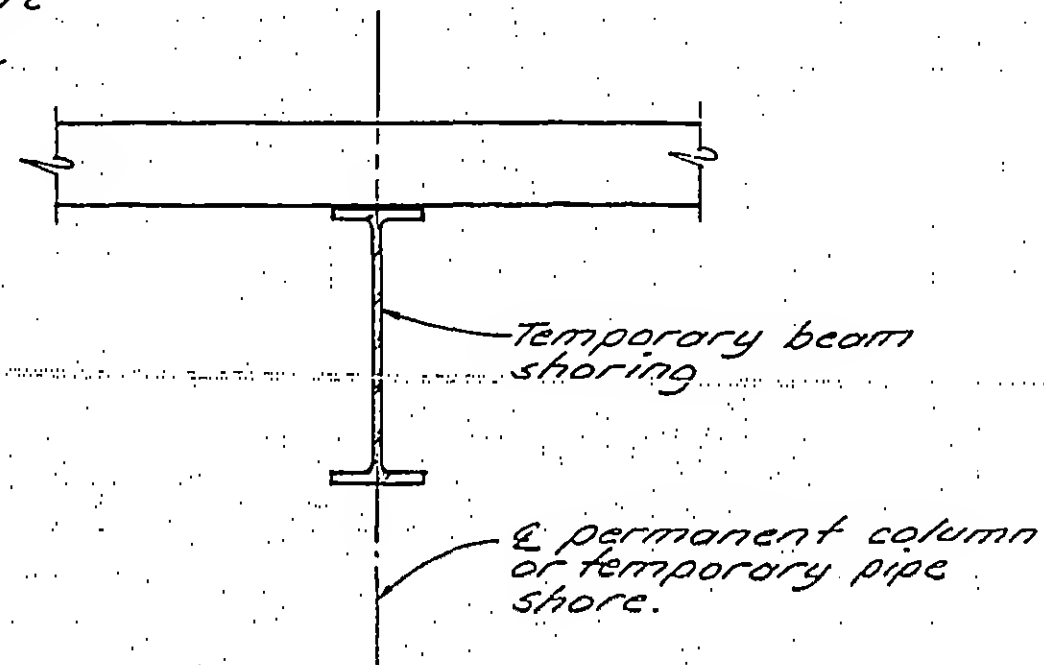
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE TEMPORARY SHORING - SECTIONS

DATE 5-1-68

REVISIONS

SECTION A-ASECTION B-B

Note: Shoring beam connections to permanent columns shall be equivalent to the standard connections given in the AISC Manual of Steel Construction (pp. 4-9 to 4-31). Loads for these connections shall be the allowable loads on beams given in the beam load tables in the AISC Manual of Steel Construction (pp. 2-10 to 2-43).



B-JK8-20.2

PROJECT *THE WORLD TRADE CENTER*TITLE *TEMPORARY SHORING - SECTIONS*DATE *5-1-68*

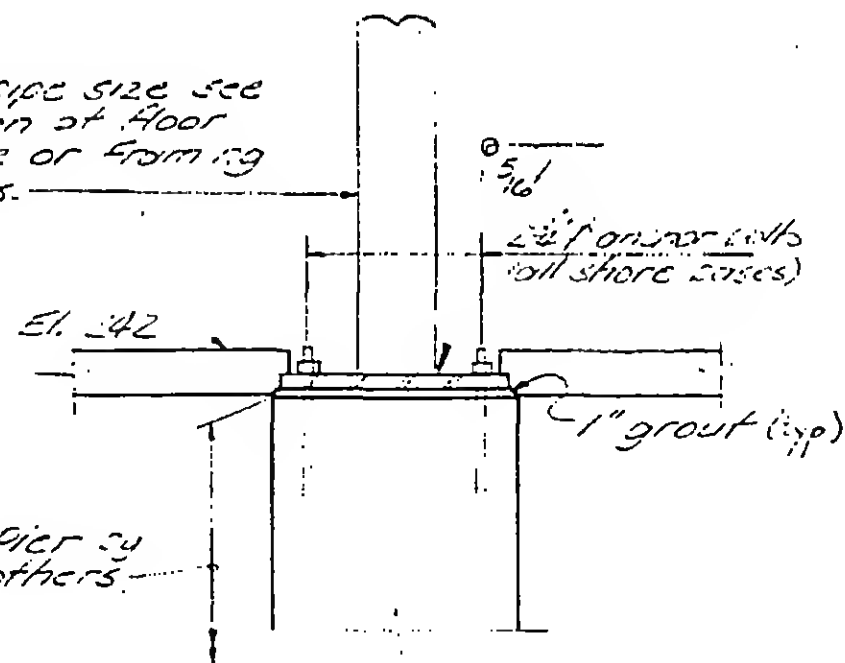
REVISIONS

| PIPE SHORE | BASE PLATE SIZE | MIN. PIER SIZE |
|-----------------|------------------|----------------|
| 6" ϕ std. | 14" x 14" x 1/2" | 16" x 16" |
| 8" ϕ std. | 16" x 18" x 1/2" | 18" x 18" |
| 10" ϕ std. | 20" x 24" x 1/2" | 22" x 22" |
| 10" ϕ XX | 30" x 24" x 2/6" | 32" x 32" |
| 12" ϕ std. | 28" x 24" x 2/6" | 36" x 36" |

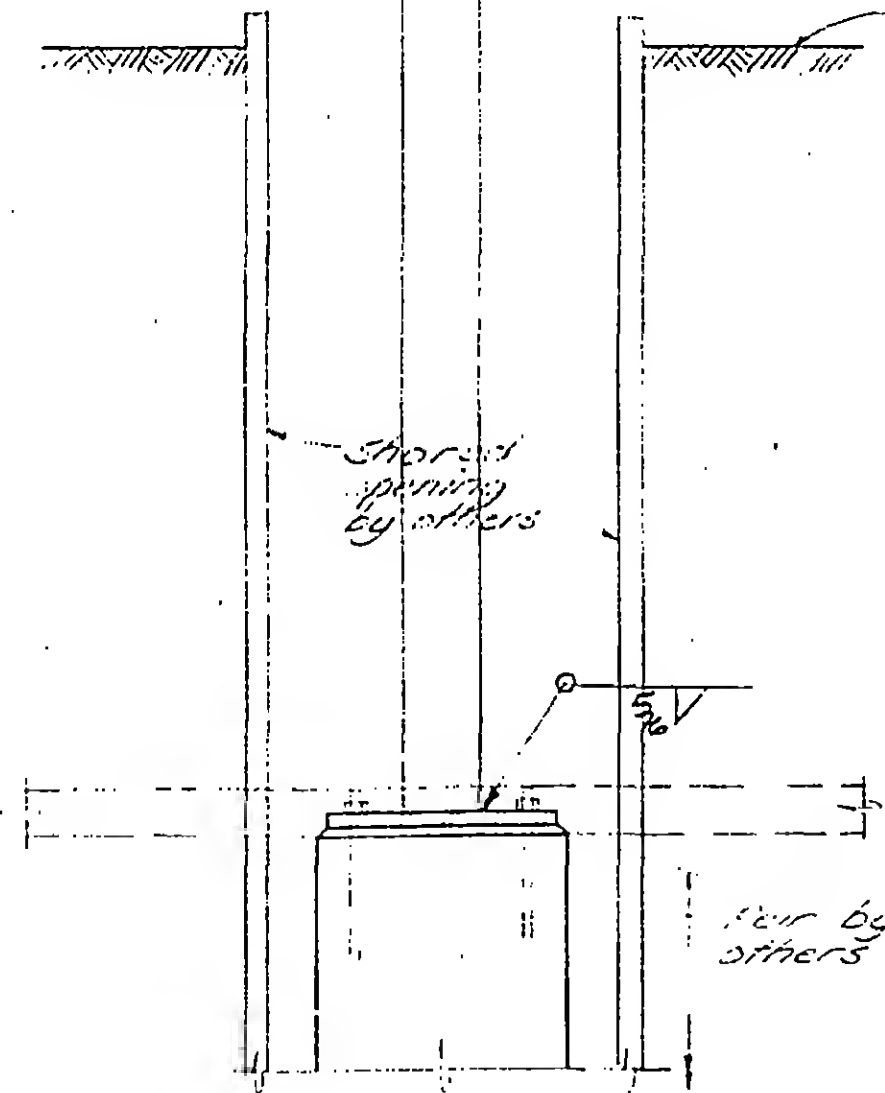
For pipe size see
section of floor
above or framing
plans.

Temp. grade until
after removal of
existing PATH tube

For pipe size see
section of floor
above or framing
plans.



SECTION C-C



SECTION D-D



SJK8-20.3

SKILLING - HELLE - CHRISTIANSEN - ROBERTSON

Structural & Civil Engineers

PROJECT

THE WORLD TRADE CENTER

TITLE

TEMPORARY SHORING - SECTIONS

DATE

5-1-68

REVISIONS

For pipe size see section at floor
above or Framing Plans.

El. 250'-0"

For base R, anchor
bolts and pier
size - see schedule
8-JK8-20.3

By others

By others

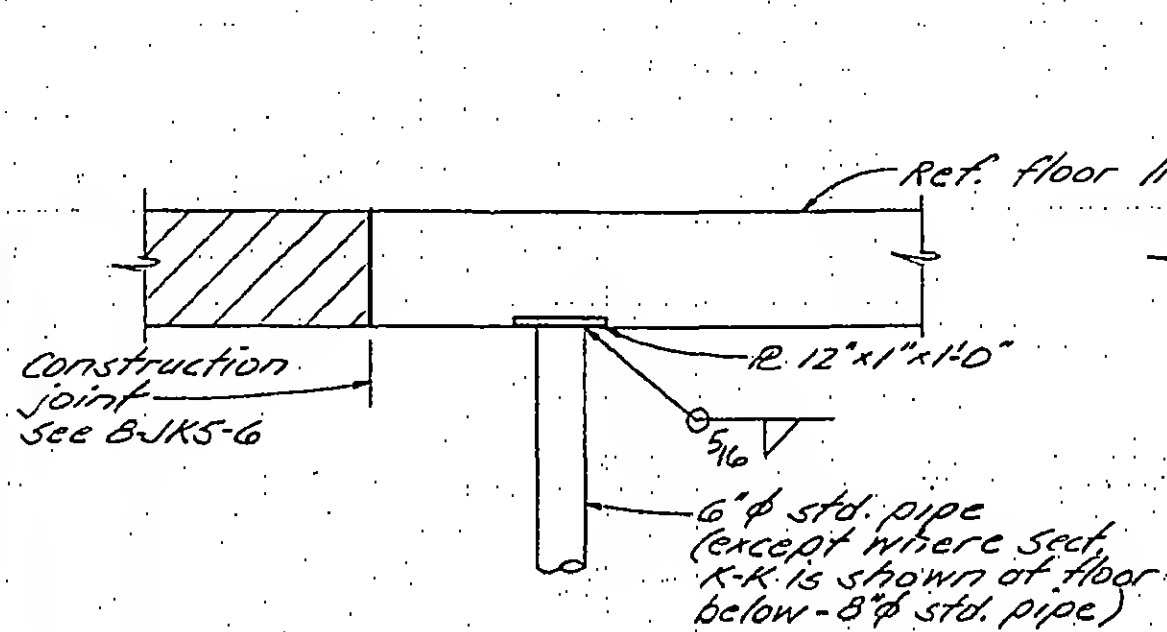
By others

Section E-ESection F-FSection G-G

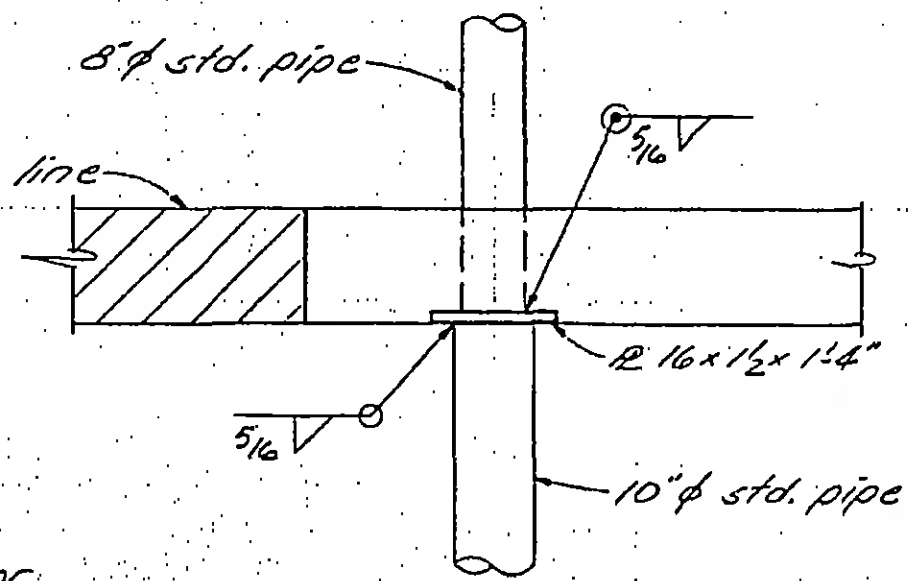
8-JK8-20.4

REVISIONS

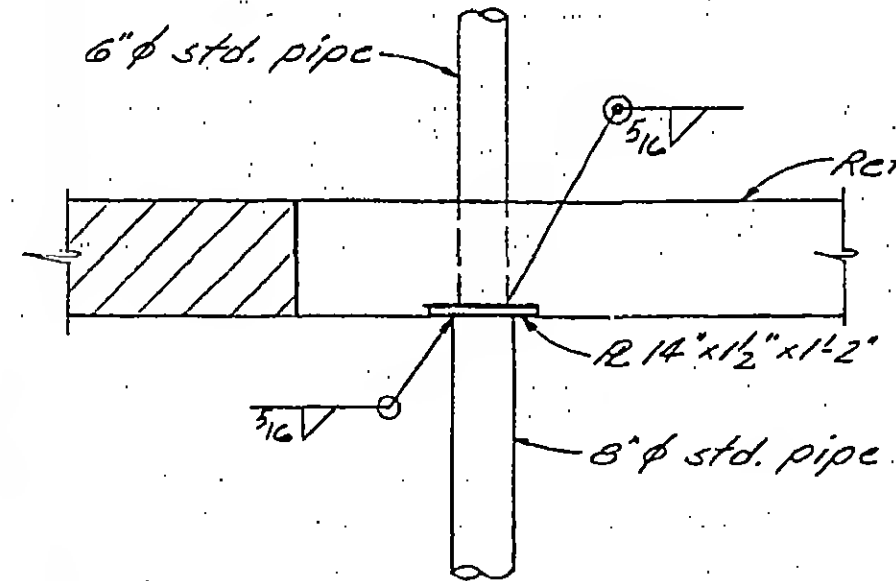




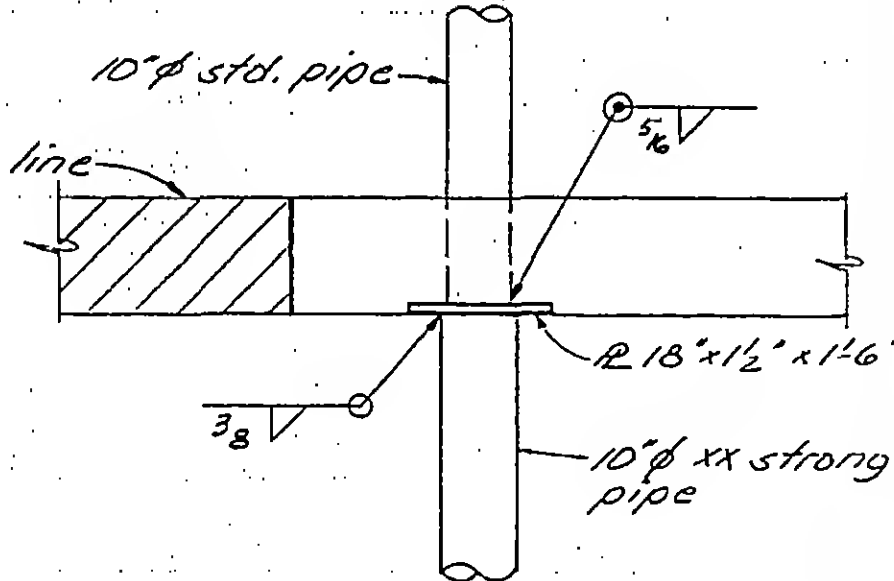
SECTION H-H



SECTION K-K



SECTION J-J



SECTION M-M

SKILLING - HELLE - CHRISTIANSEN - ROBERTSON

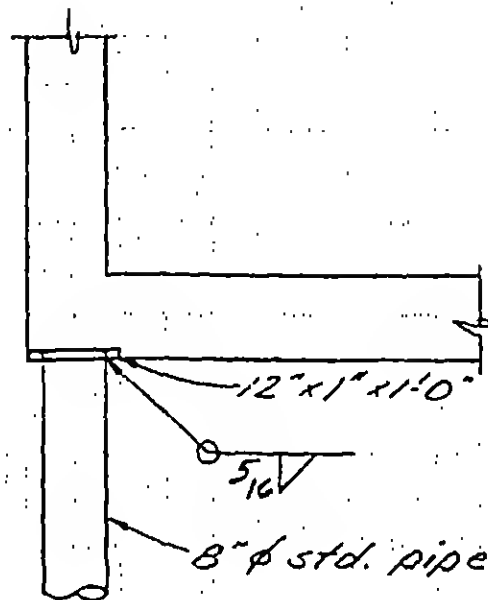
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

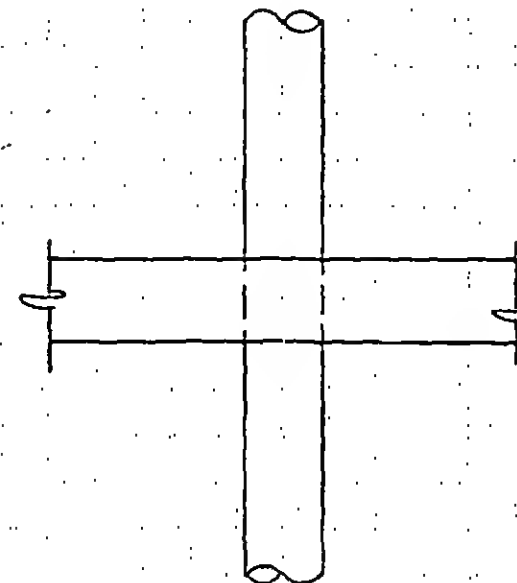
TITLE TEMPORARY SHORING - SECTIONS

DATE 5-1-68

REVISIONS



SECTION N-N



SECTION P-P



BJKB-20.6

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

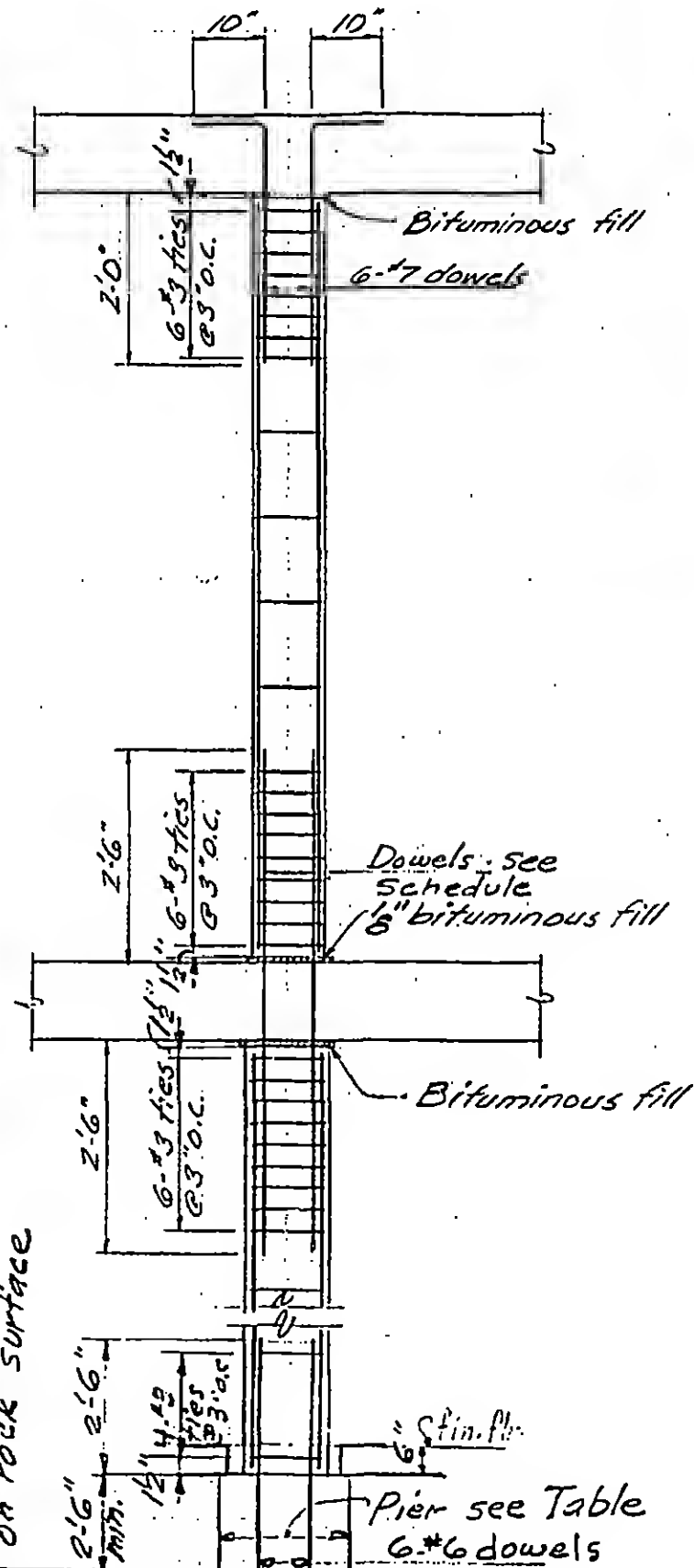
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE TEMPORARY SHORING - CONCRETE ALTERNATE

DATE 3-5-69

REVISIONS



| TABLE | | | | | | |
|--------|--|--------------------------|---------------------------------------|--------------|----------|----------------------|
| H | Steel Shoring (El. 264'-0" Postensioned) | Revised Steel Shoring | Equivalent Concrete Column Shoring | | | Min. Pier size |
| | | | Col. Diam. | Vert. Reinf. | Ties | |
| 11'-0" | 6"φ | 5"φ | 10"φ | 6-#6 | #3 @ 12" | 16"x16" |
| 11'-0" | 8"φ | 6"φ | 12"φ | 6-#6 | #3 @ 14" | 18"x18" |
| 11'-0" | 10"φ | 8"φ | 12"φ | 6-#6 | #3 @ 14" | 22"x22" |
| 11'-0" | 10"φ X X | 10"φ | 12"φ | 6-#6 | #3 @ 14" | 32"x32" |
| 14'-0" | 6"φ | 6"φ | 12"φ | 6-#6 | #3 @ 14" | 16"x16" |
| 14'-0" | 8"φ | 8"φ | 12"φ | 6-#6 | #3 @ 14" | 18"x18" |
| 14'-0" | 10"φ X X | 10"φ X | 12"φ | 6-#6 | #3 @ 14" | 32"x32" |
| 19'-6" | 8"φ (braced) | 10"φ (not braced) | 12"φ | 6-#6 | #3 @ 14" | 22"x22" |
| | | | | | | |
| | | | | | | |

H = maximum distance from top of slab to top of slab.
All pipe column to be standard grade except as noted.

Construction procedure:

- 1.) Screenshot level with soffit of conc. slab
- 2.) After concrete has taken initial set, fill top of column with bituminous filler to bring level with soffit of slab. Provide not less than 8" bituminous filler.
- 3.) Cast concrete slab.
- 4.) Within an area not less than 1" greater than the column, provide 8" bituminous filler
- 5.) Repeat steps 1.) through 4.) as required.

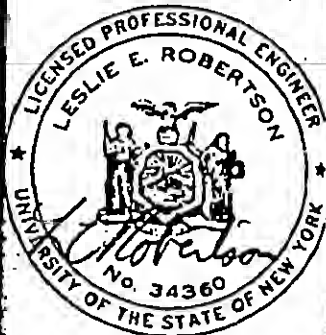
Notes:

- 1) $f'_c = 3000 \text{ psi}$
- 2) ASTM A615-60 reinforcing
- 3) Forms: Sometube or equivalent

DOWEL SCHEDULE

| | |
|--------------|------|
| 10"φ to 10"φ | 6-#7 |
| All others | 6-#8 |

8-JK8-20.7

DESIGNED
G. RaizisDRAWN
J. AdamsREVIEWED
L. E. Robertson

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

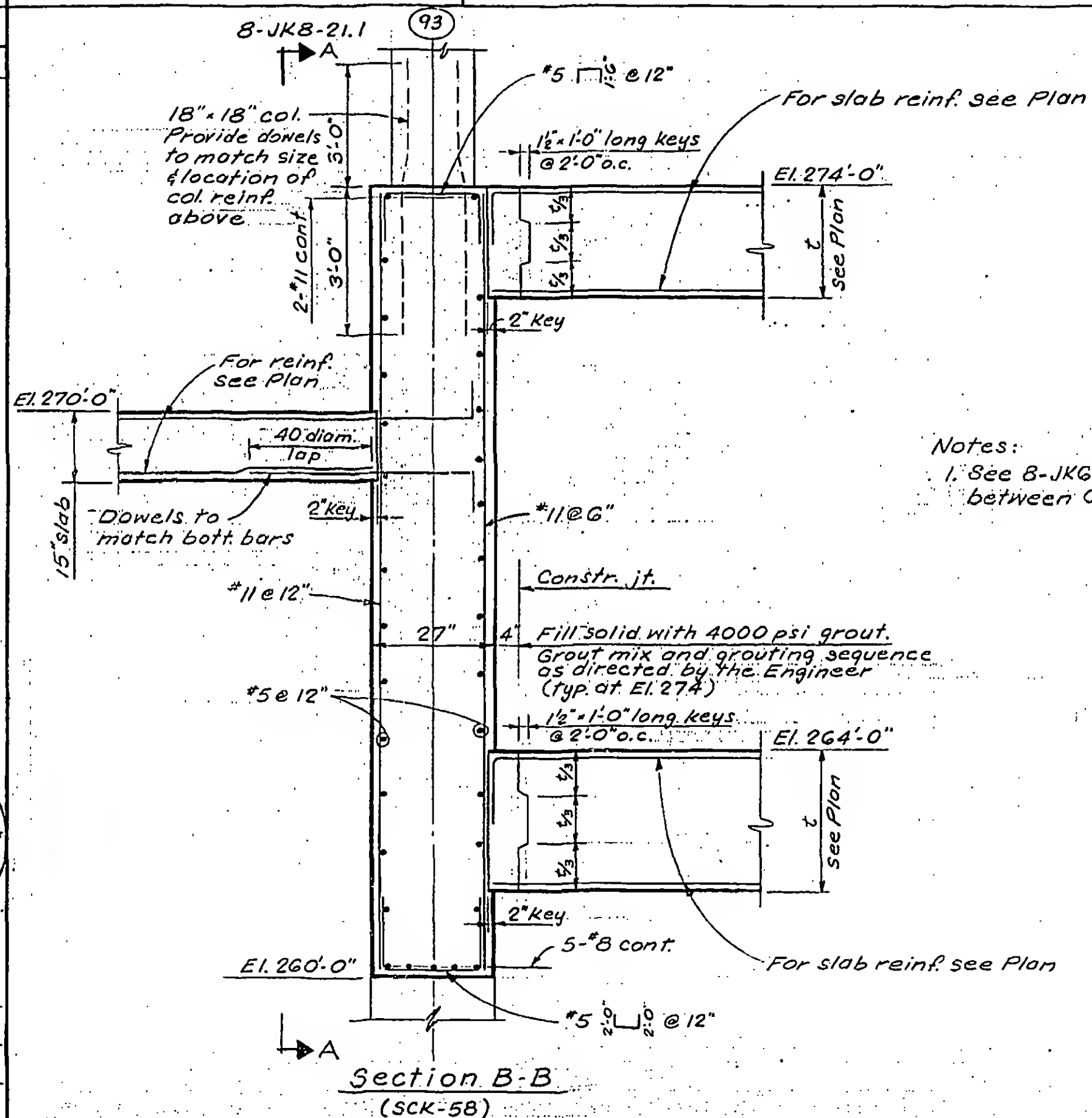
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE SOUTH PROJECTION - SECTIONS

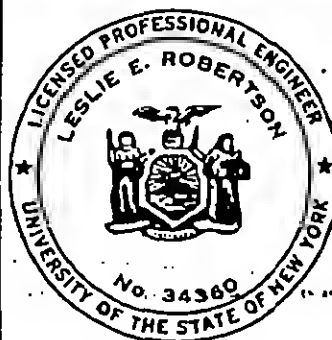
DATE 7-9-68

REVISIONS

4-16-69 GEN.
REV.

Notes:

1. See 8-JK6-2.3 for conn. detail between C.I.P. wall & slurry wall.

DESIGNED
N.M.DRAWN
S.C.REVIEWED
E.L.

8-JK8-21.2

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

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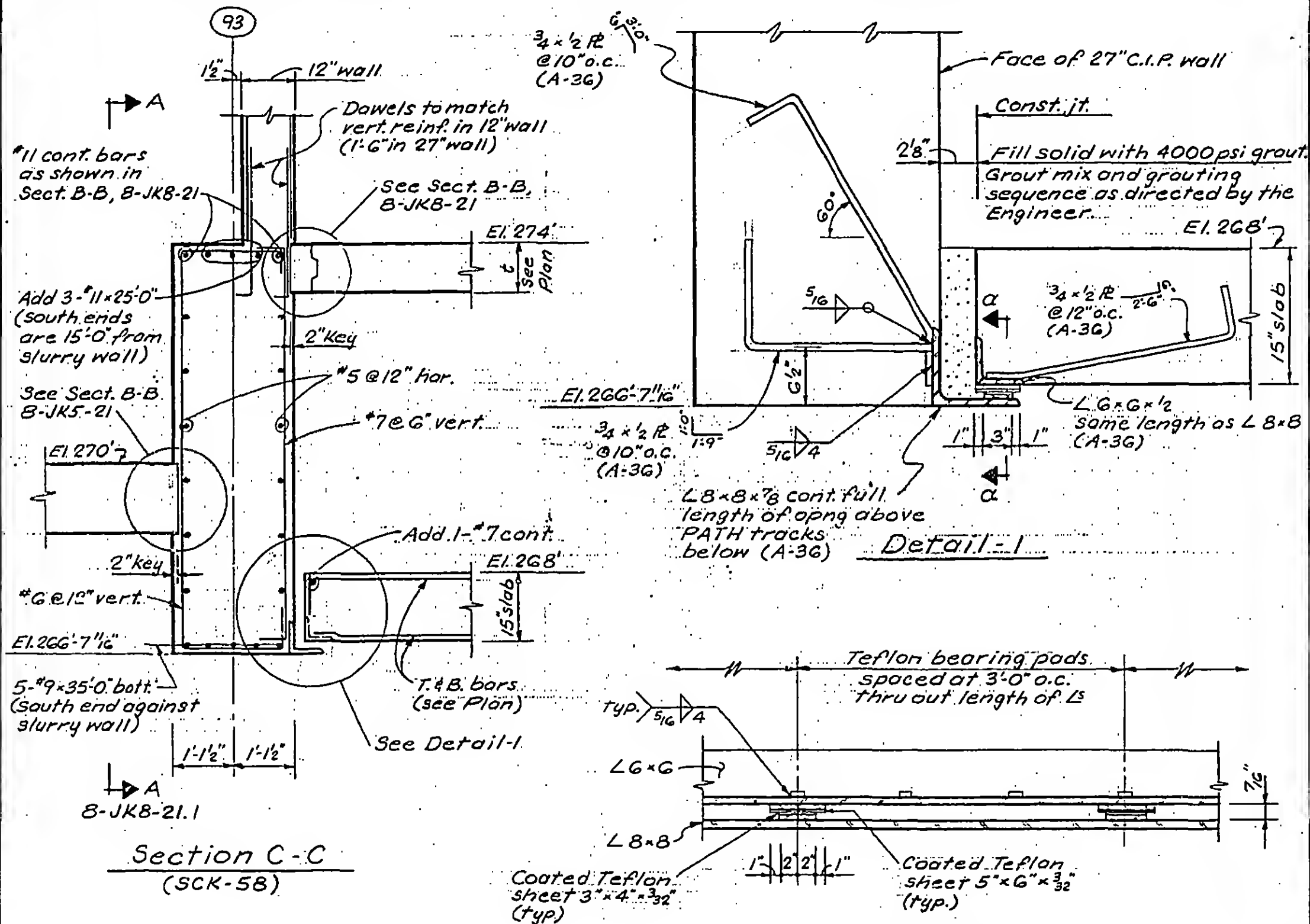
PROJECT THE WORLD TRADE CENTER

TITLE

SOUTH PROJECTION - SECTIONS

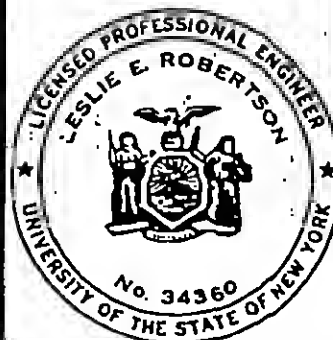
DATE 7-9-68

REVISIONS

4-16-69 GEN.
REV.

Notes:

1. See Specifications for welding.

DESIGNED
N.M.DRAWN
S.C.REVIEWED
E.L.

B-JK8-21.3

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

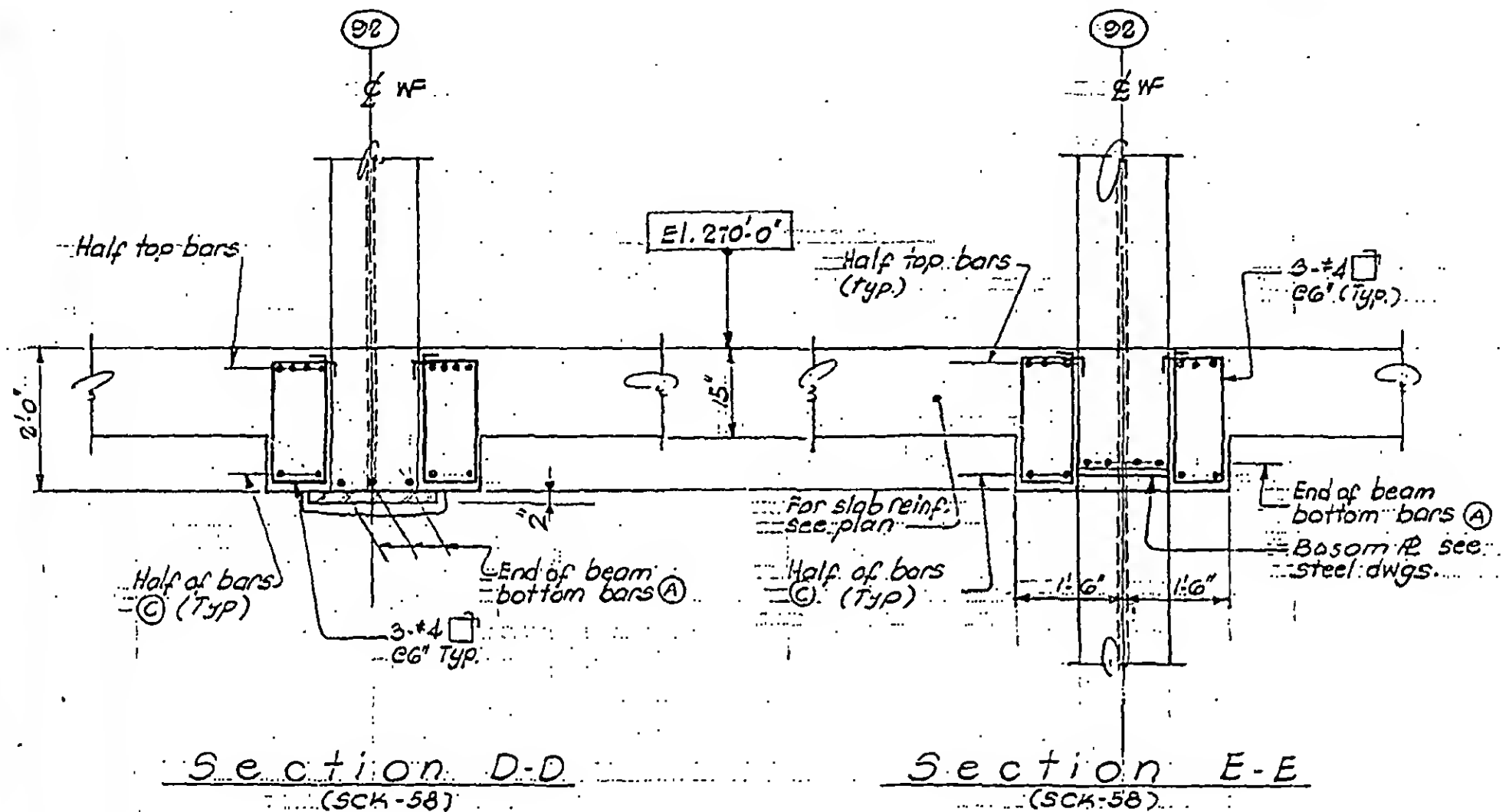
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TITLE SOUTH PROJECTION-SECTIONS

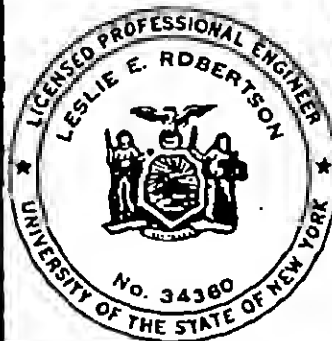
DATE 7-9-68

REVISIONS

4-16-69 GEN.
REV.

Note:

For beam reinf. see schedule on B-JK5-22.

DESIGNED
N.M.DRAWN
S.T.M.

REVIEWED

8-JKB-21.4

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

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PROJECT THE WORLD TRADE CENTER

TITLE SOUTH PROJECTION SECTIONS

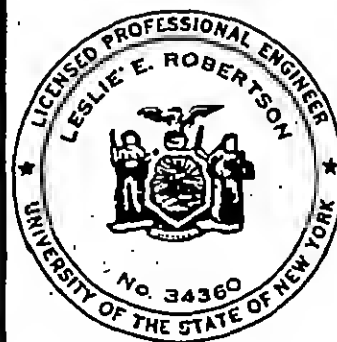
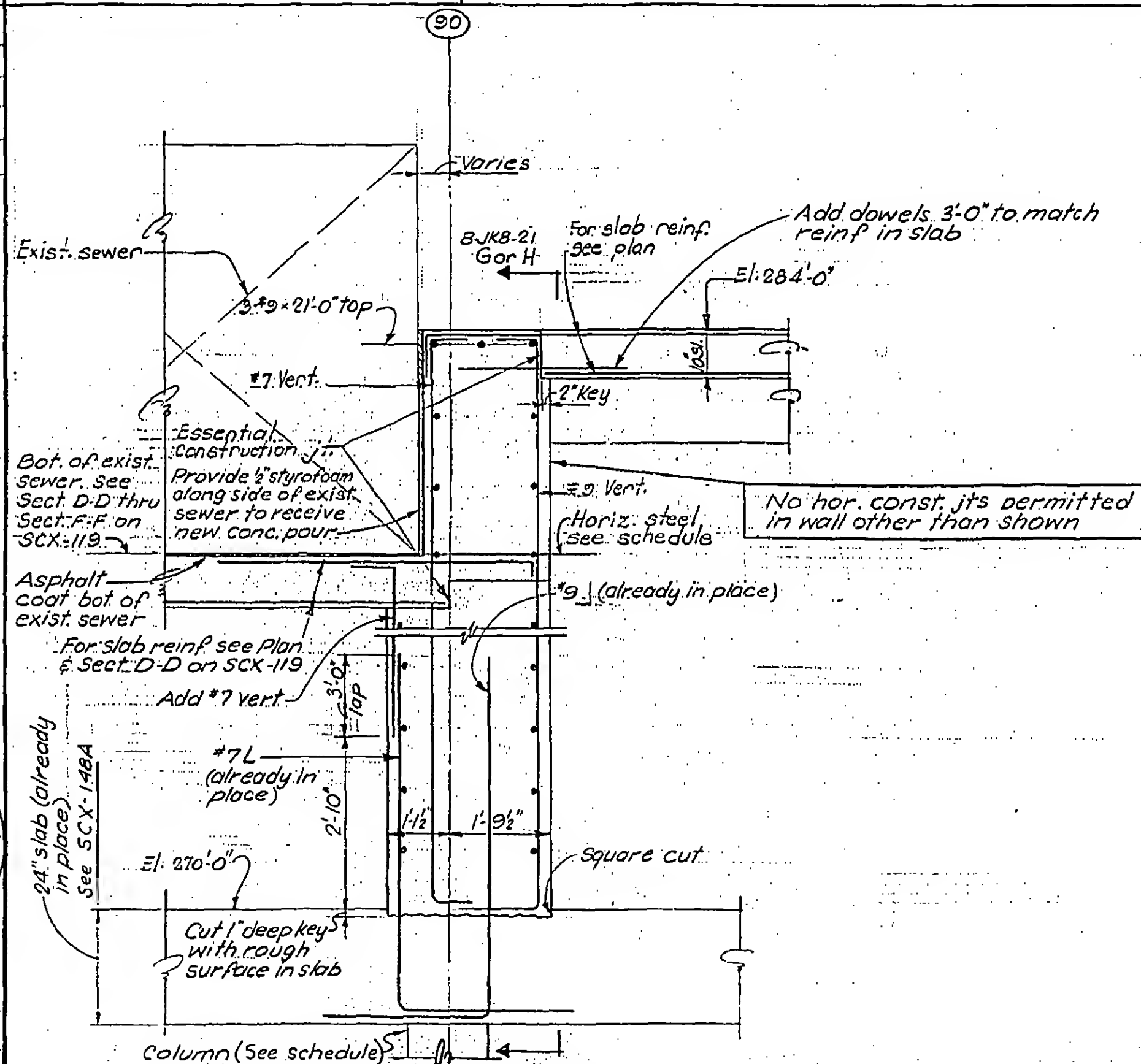
DATE 7-9-68

REVISIONS

4-16-69 GEN.
REV.

7-23-70

2-27-70

6-30-70 GEN.
REV.DESIGNED
N.M.DRAWN
S.T.M.REVIEWED
E.L.Section F-F
(SCK-58)

8-JK8-21.5

Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE: SOUTH PROJECTION - SECTIONS

DATE 7-9-68

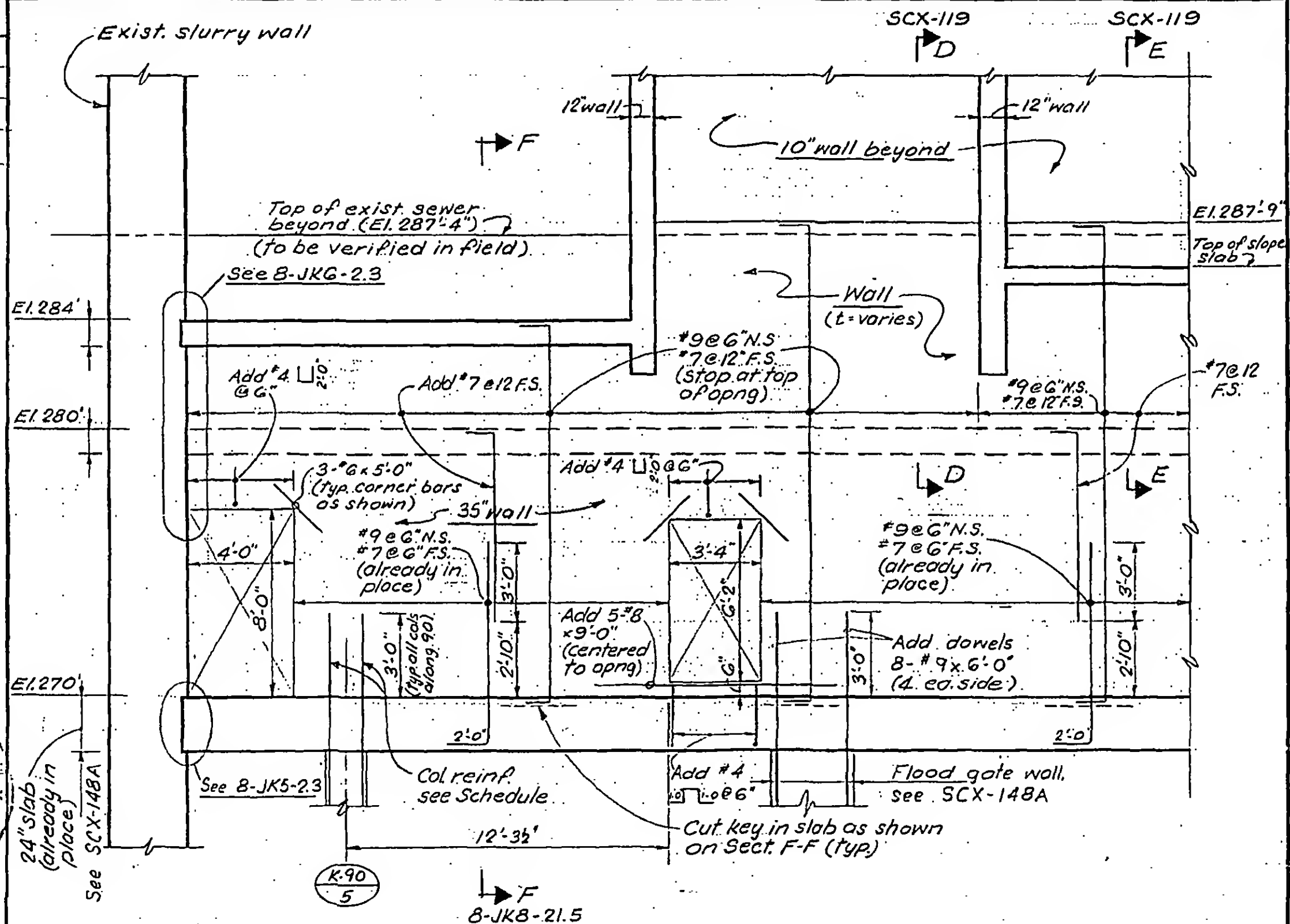
REVISIONS

4-16-69 GEN.
REV.

1- 23-70

: 2-27-70

6-30-70 GEN.
REV.



Section G-G
(SCK-58)

Note: See Archt. Dwgs. for detail at door jambs.

8-JK8-21.6



DESIGNED
N.M.

DRAWN
S.C.

REVIEWED
E.L.

Structural & Civil Engineers

PROJECT *THE WORLD TRADE CENTER*

| | |
|-------|-----------------------------|
| TITLE | SOUTH PROJECTION - SECTIONS |
|-------|-----------------------------|

| | |
|------|--------|
| DATE | 7-9-68 |
|------|--------|

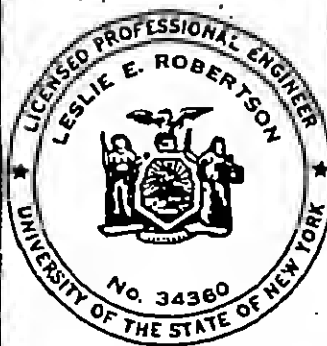
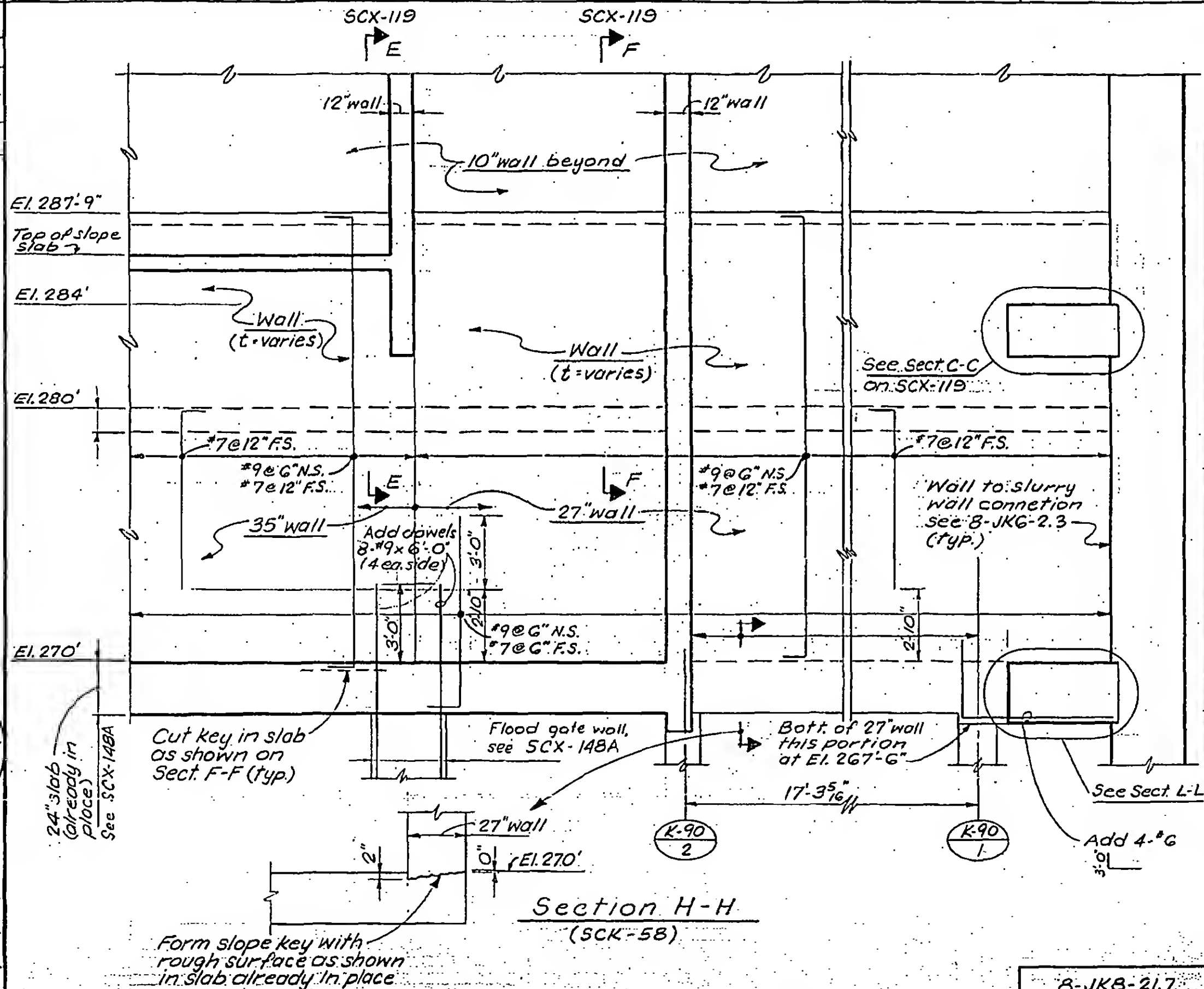
REVISIONS

4-16-69 GEN.
REV.

1- 23-70

2-27-70

6-30-70 GEN.
REV.



DESIGNED
N.M.

DRAWN
: S;C

REVIEWED
E.L.

8-JKB-21.7

SKILLING, HELLE. CHRISTIANSEN, ROBERTSON.

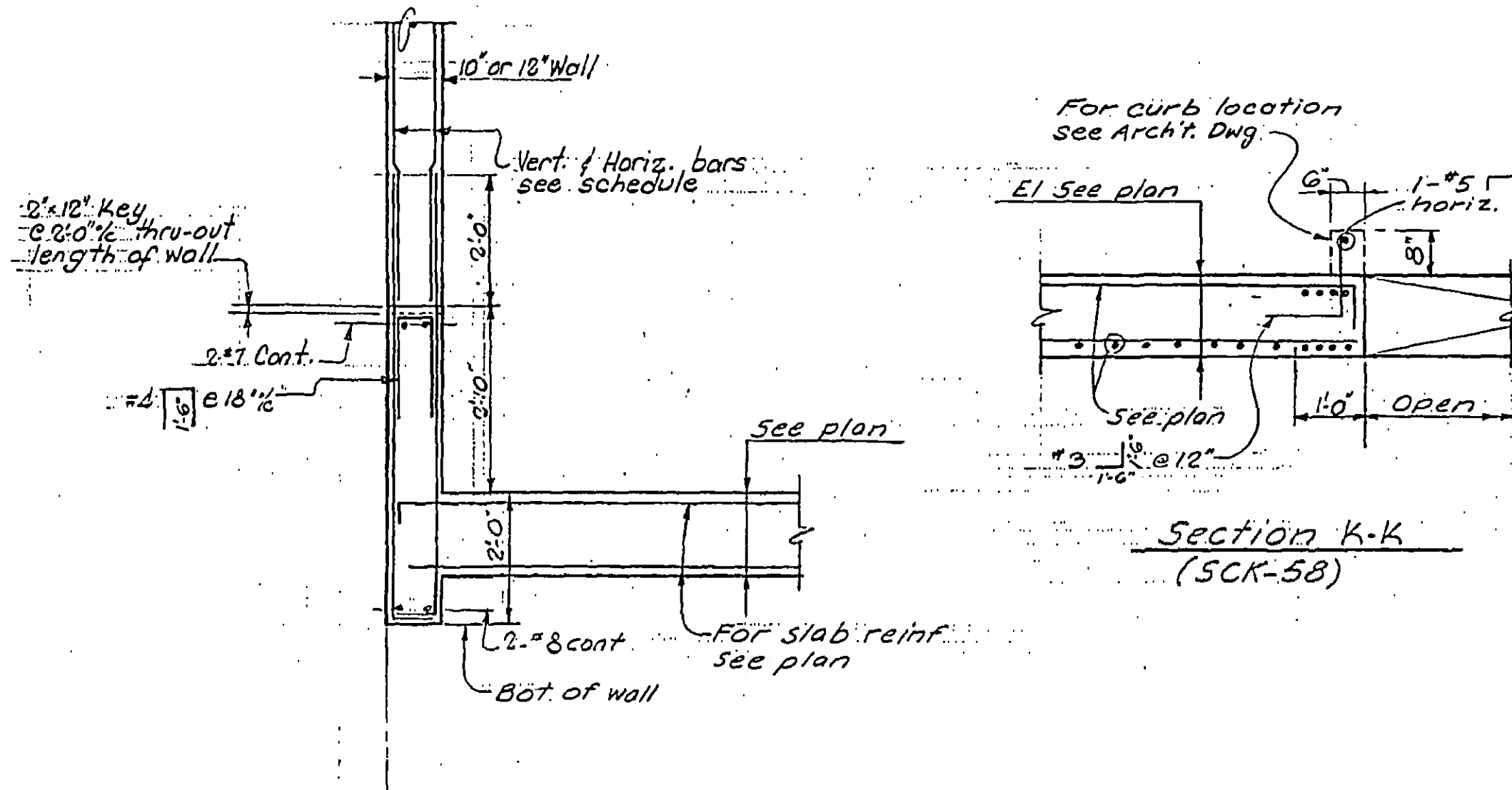
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PROJECT THE WORLD TRADE CENTER

TITLE SOUTH PROJECTION - SECTIONS

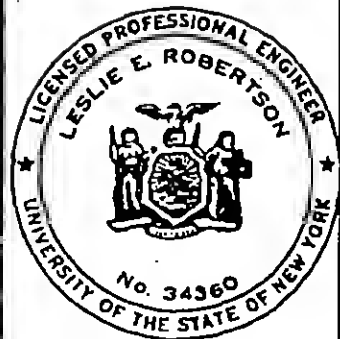
DATE 4-16-69

REVISIONS



Section J-J
(SCK-58)

Section K-K
(SCK-58)

DESIGNED
N.M.DRAWN
A.L. FRANQUIREVIEWED
E.L.

8-JK8-21.8

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

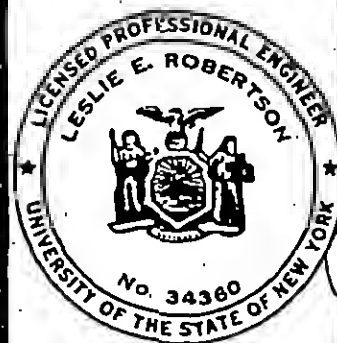
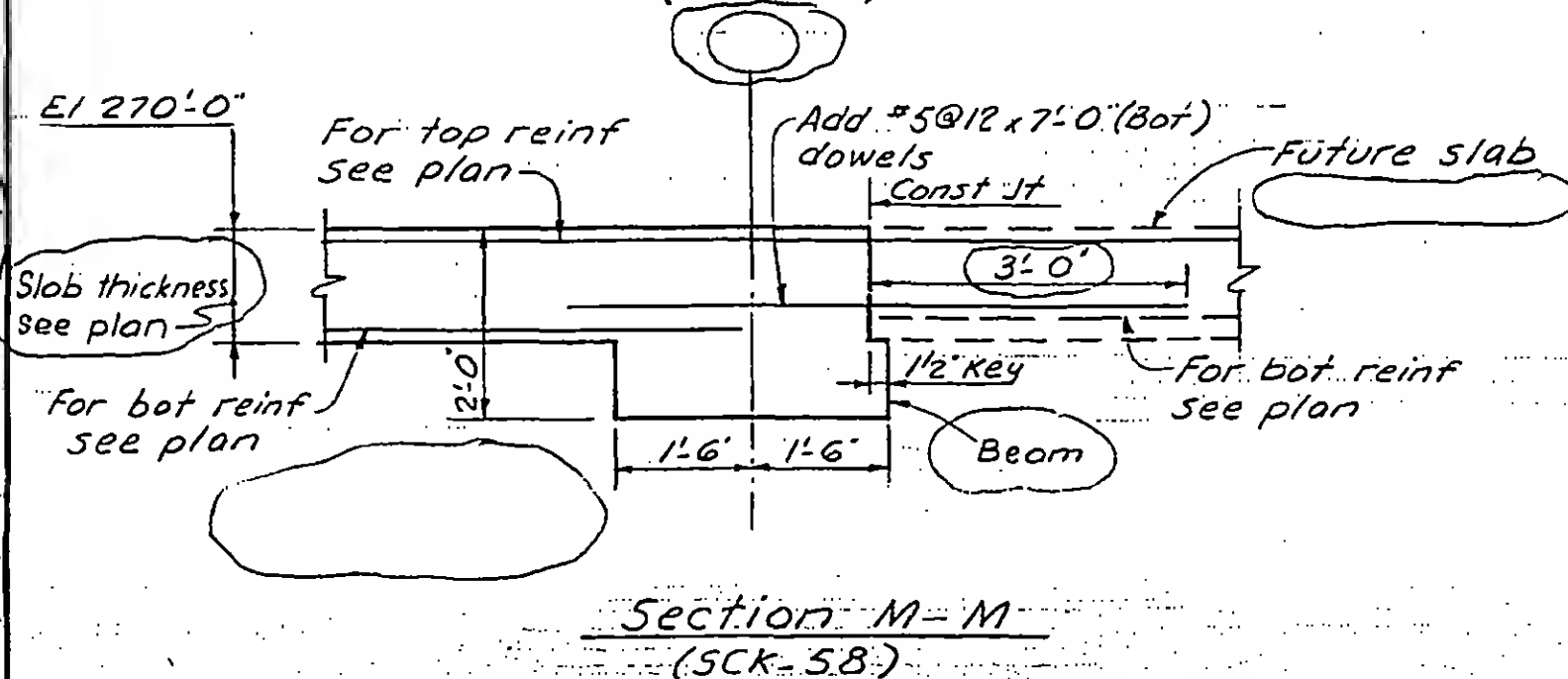
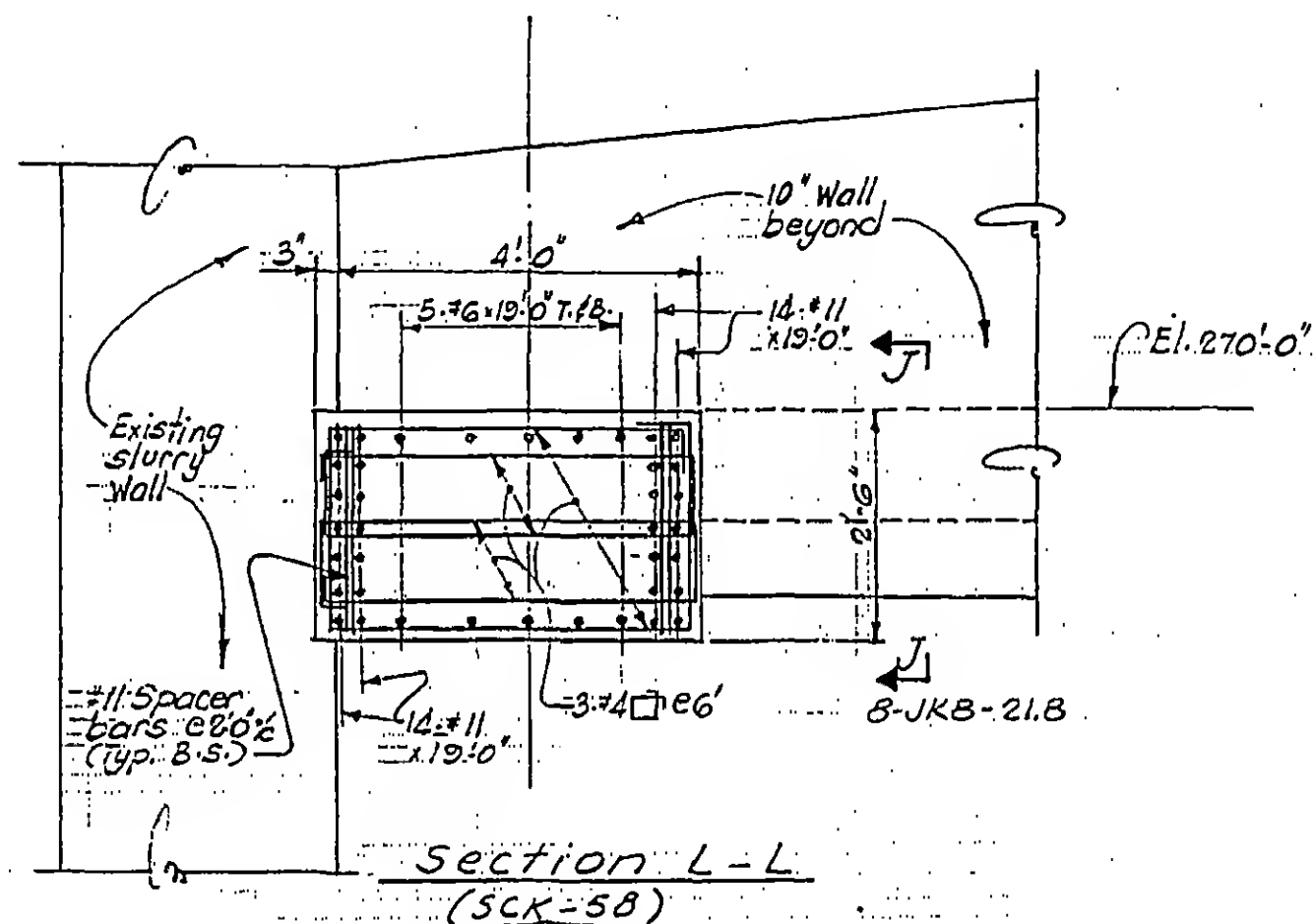
PROJECT THE WORLD TRADE CENTER

TITLE SOUTH PROJECTION-SECTIONS

DATE 4-16-69

REVISIONS

1-23-70

DESIGNED
N.M.DRAWN
S.T.M.REVIEWED
E.L.

8-JKB-21.9

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

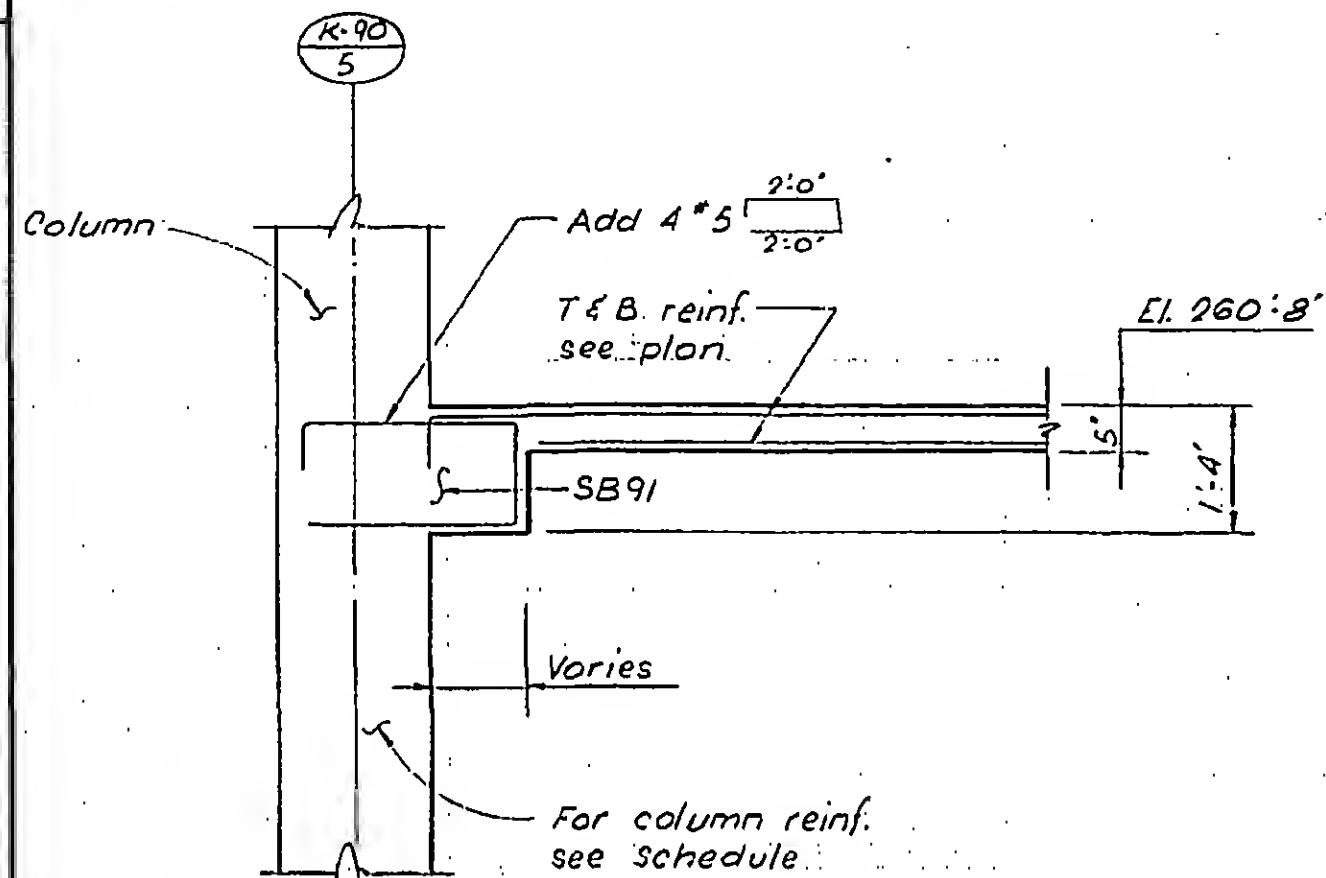
PROJECT THE WORLD TRADE CENTER

TITLE

SOUTH PROJECTION - SECTIONS

DATE 1-23-70

REVISIONS



SECTION N-N
(5' - 1'-0")



8-JK8-21.10

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

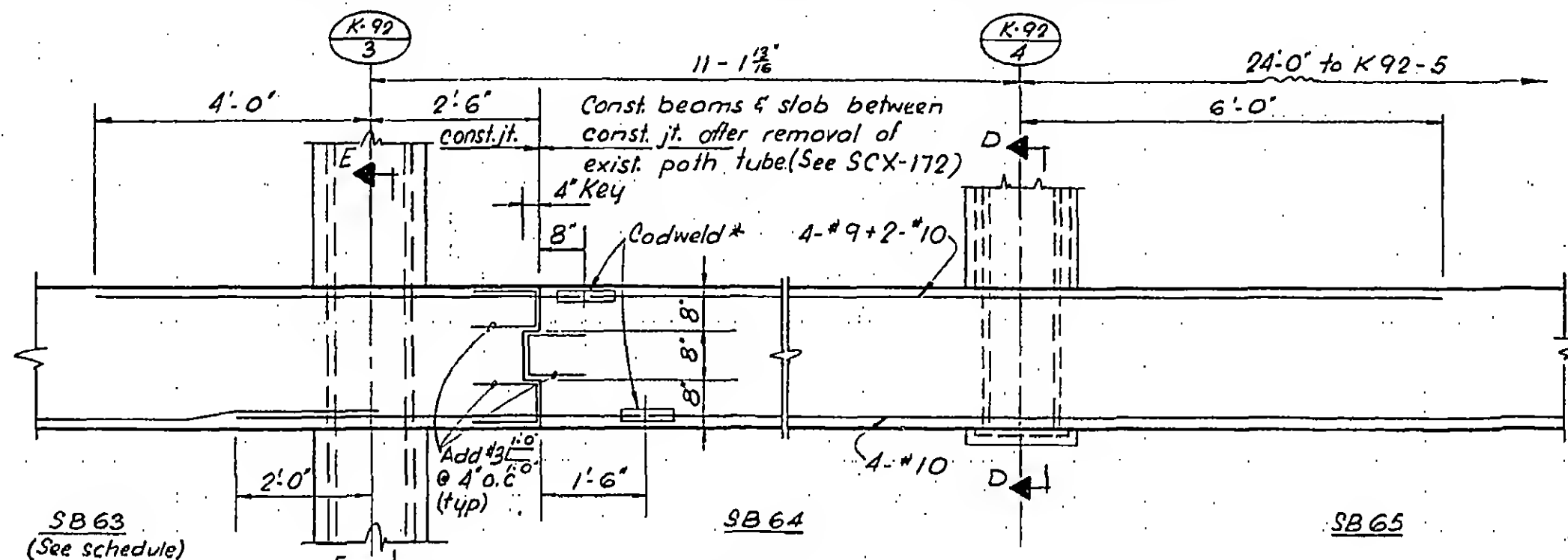
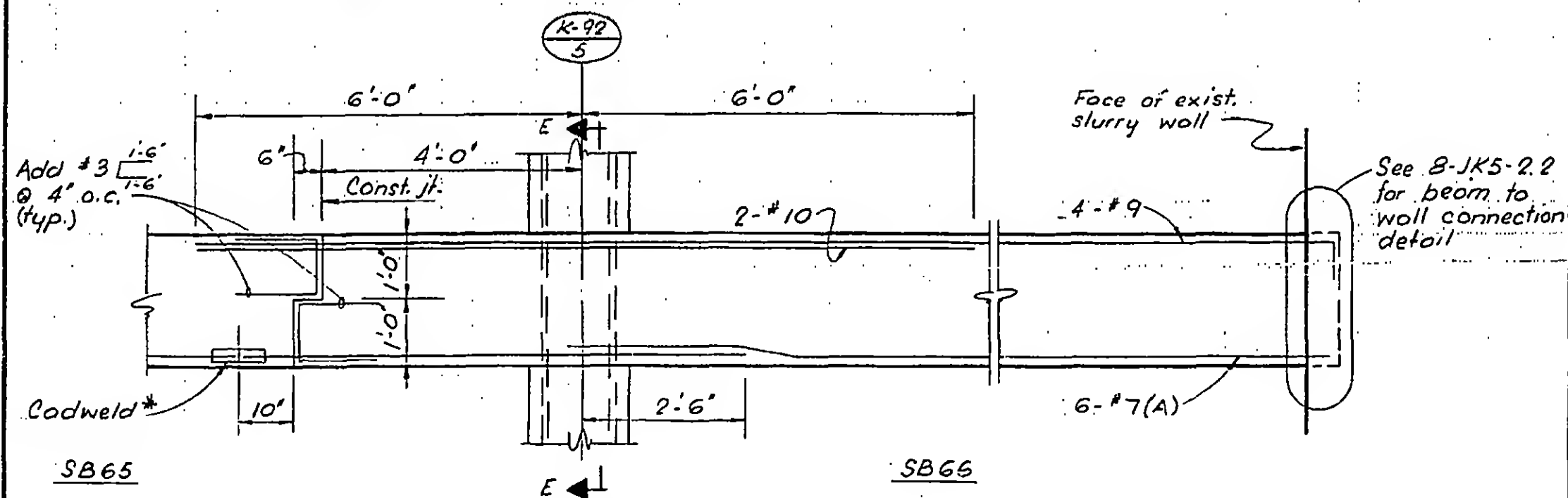
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE SOUTH PROJECTION - SECTIONS.

DATE 1-23-70

REVISIONS

SECTION P-P
(15' x 1'-0")SECTION P-P (cont.)
(15' x 1'-0")

- Note: 1. * - splice top and bottom bars as shown with T-series Codweld splice.
2. See schedule on 8-JK5-22 for beam size and stirrups.

8-JK8-21.11



DESIGNED

DRAWN

T.T.

REVIEWED

E.L.

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

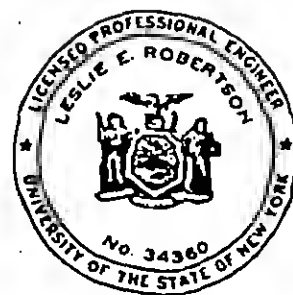
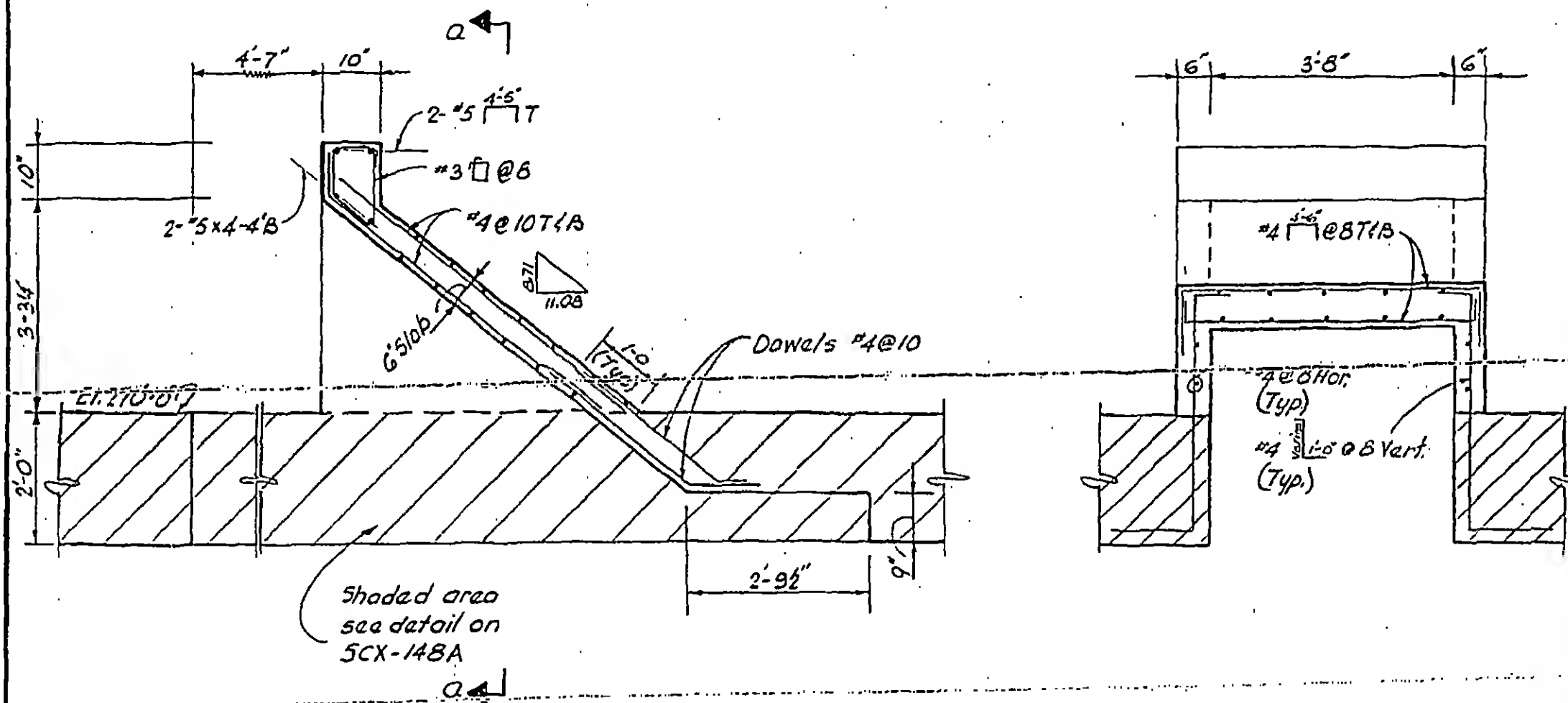
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE SOUTH PROJECTION - SECTIONS

DATE 2-16-70

REVISIONS



DESIGNED

DRAWN

D. Huggins

REVIEWED

E.L.

R-14-B-0610

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

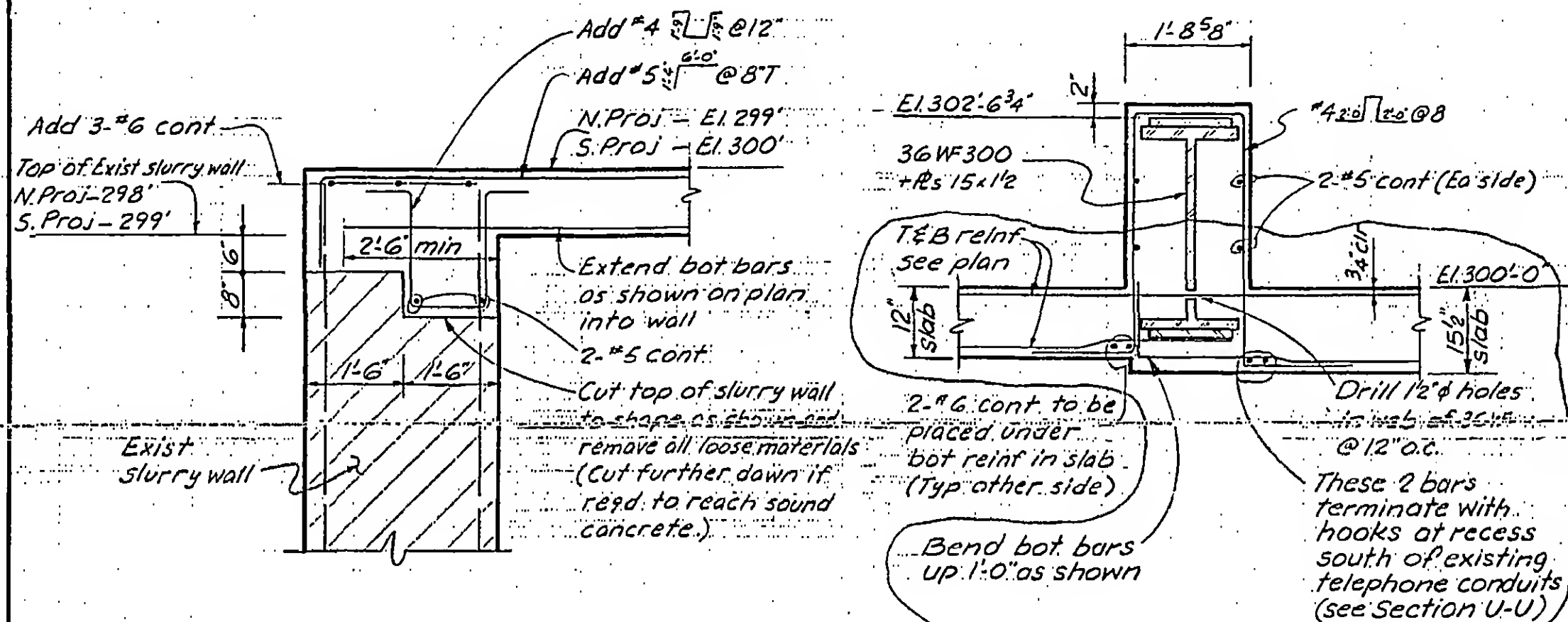
PROJECT THE WORLD TRADE CENTER

TITLE SOUTH PROJECTION - SECTIONS

DATE 2-27-70

REVISIONS

8-28-70



DESIGNED

DRAWN

A.L.F.

REVIEWED

E.L.

8-1K8-21.13

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

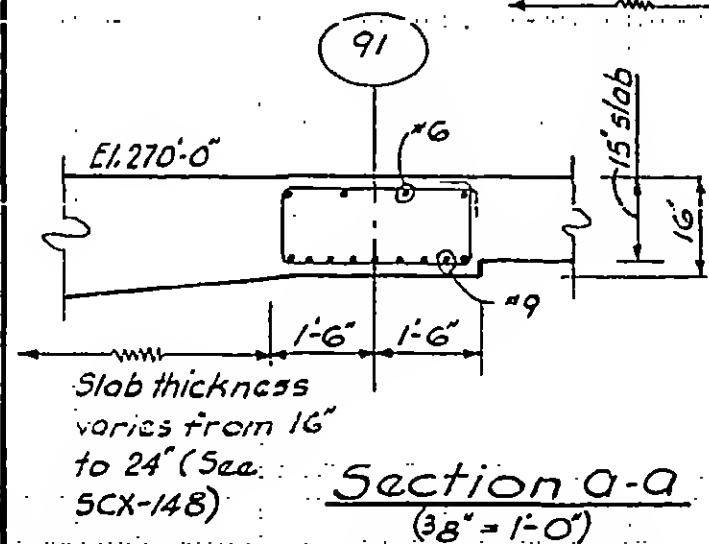
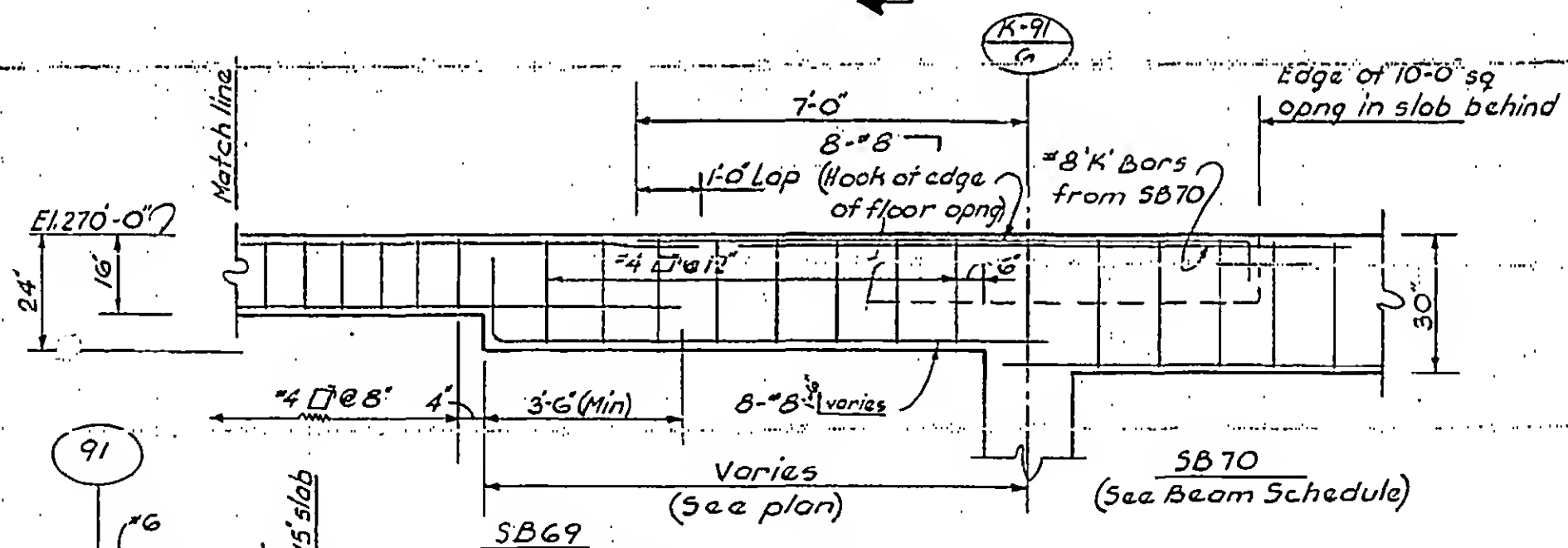
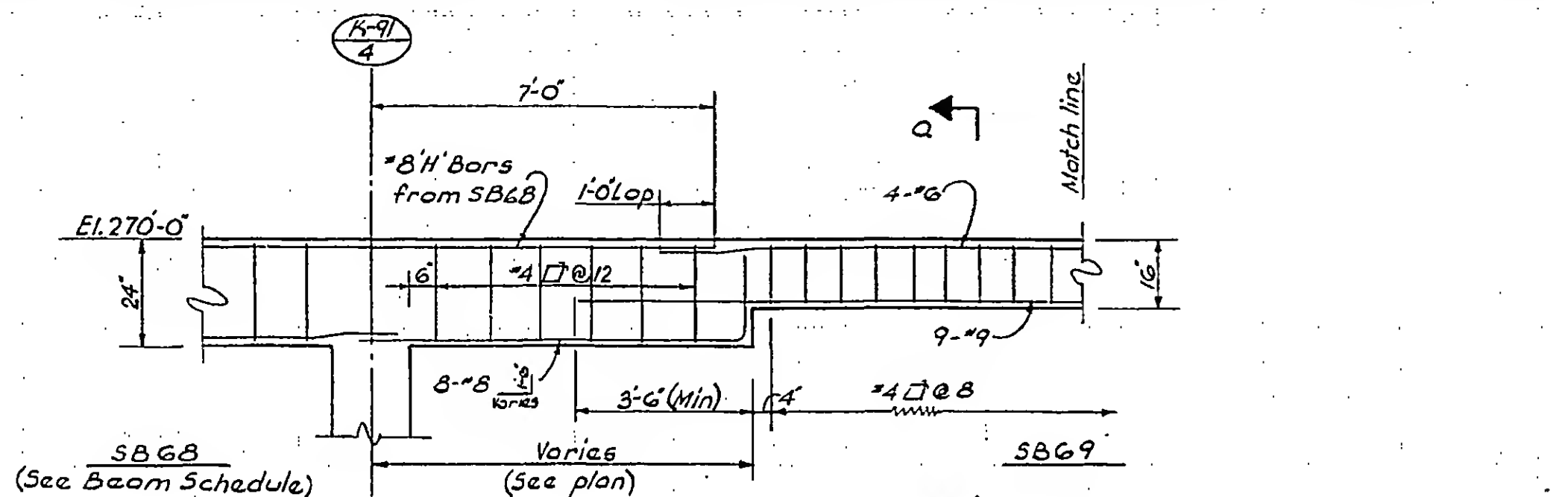
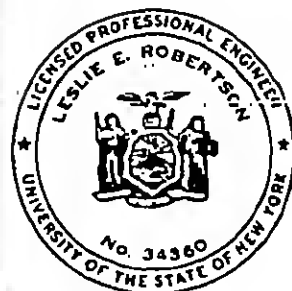
PROJECT THE WORLD TRADE CENTER

TITLE

SOUTH PROJECTION - SECTIONS

DATE 4-9-70

REVISIONS

SECTION T-T
(38" = 1'-0")Section a-a
(38" = 1'-0")

DESIGNED

DRAWN
D. Huggins

REVIEWED

R-114 2-21-11

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

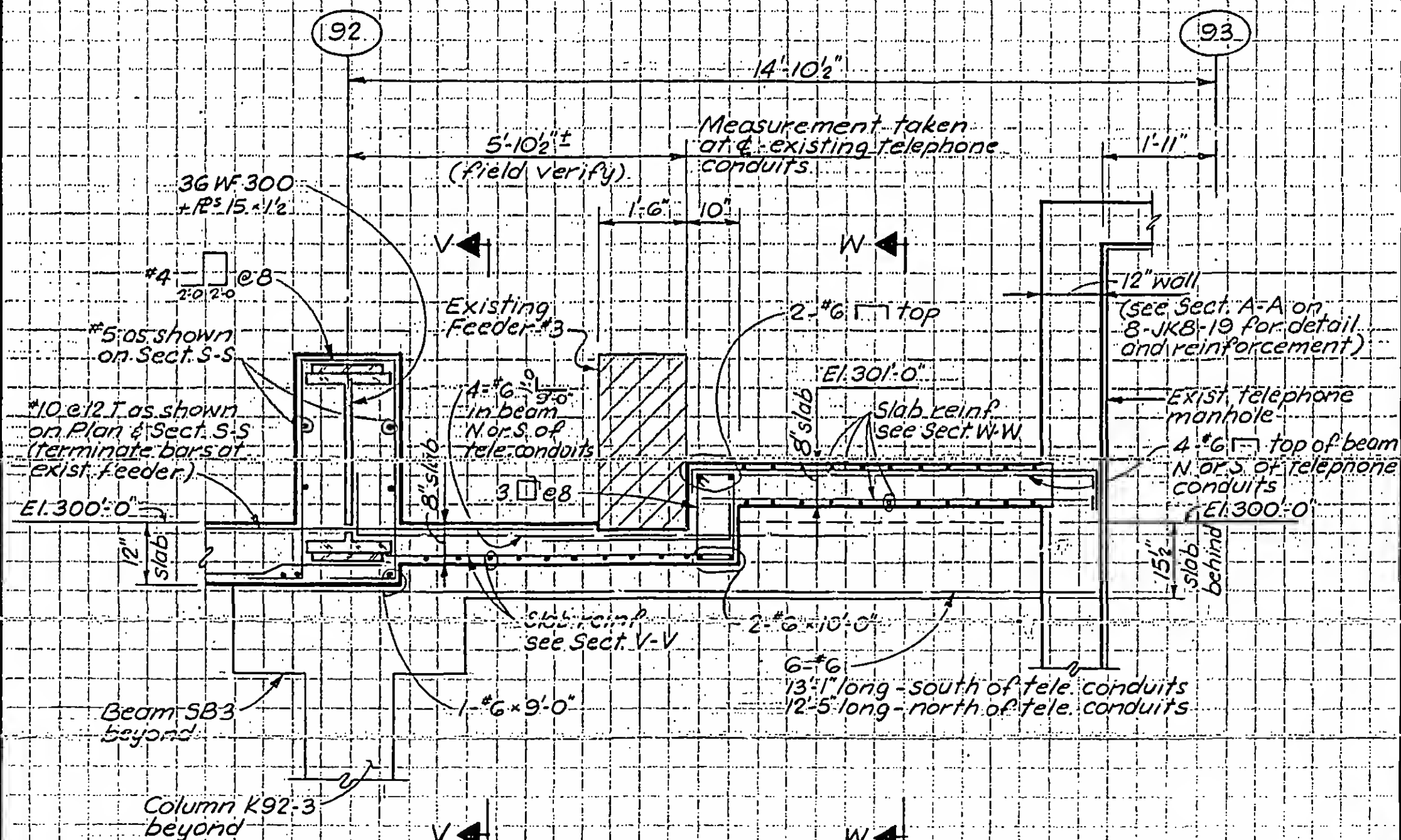
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE SOUTH PROJECTION - SECTIONS

DATE 8-28-70

REVISIONS



DESIGNED

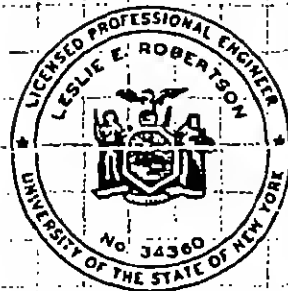
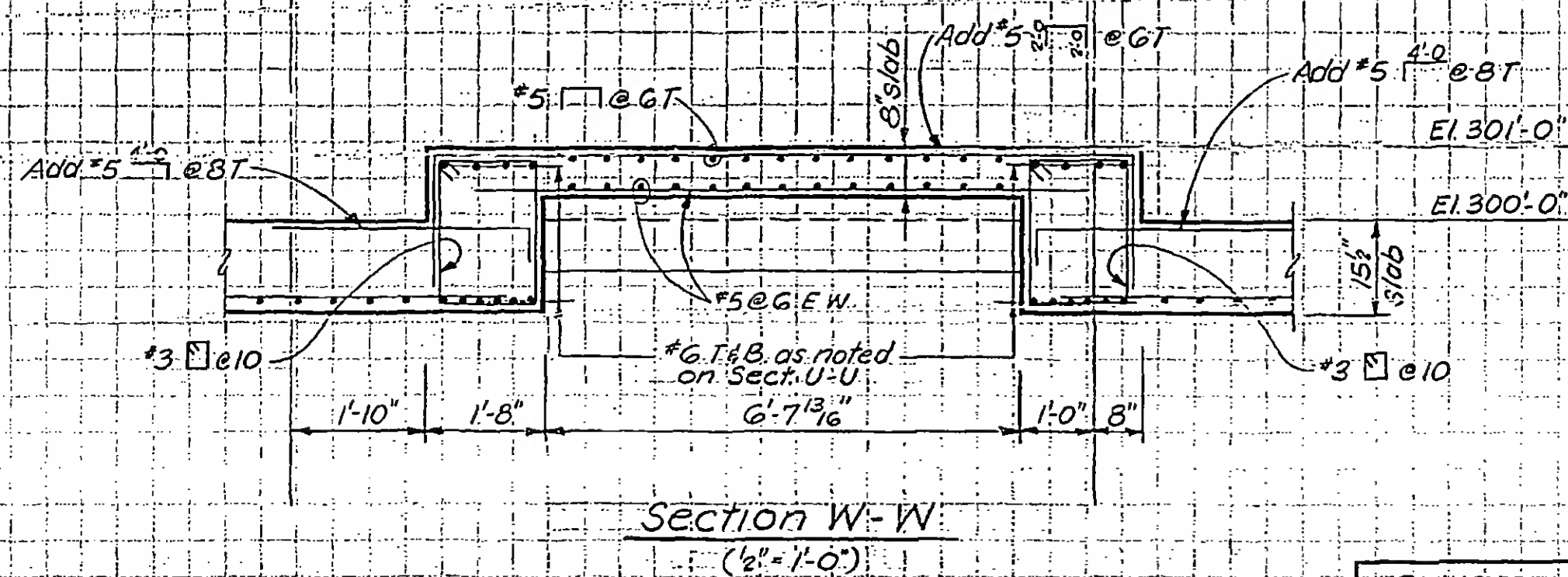
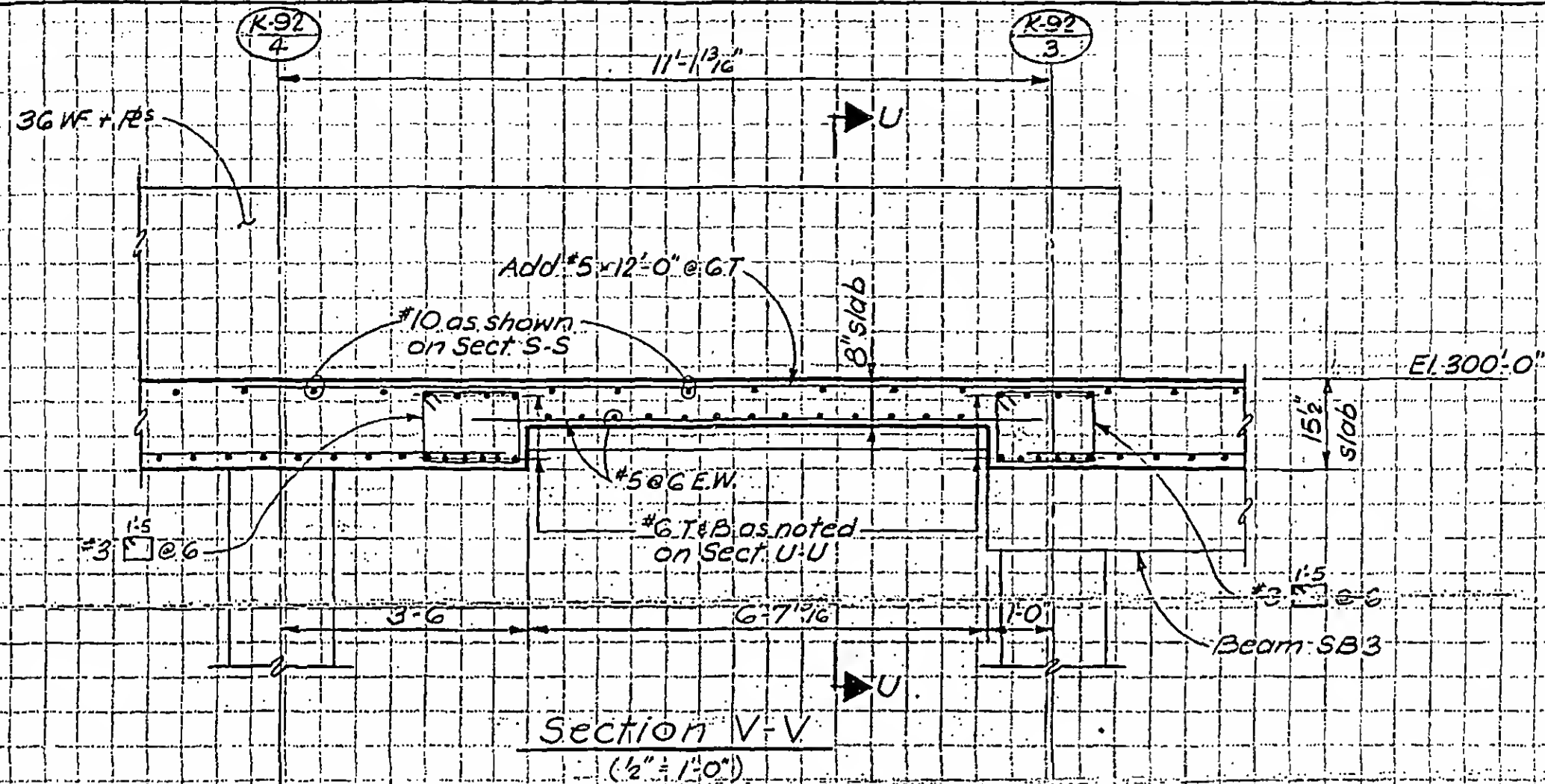
Structural & Civil Engineers

TITLE

SOUTH PROJECTION-SECTIONS

DATE 8-28-70

REVISIONS



DESIGNFO

DRAWN
S.C.

REVIEWED
EL

Α: 1ΚΑ-2116

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PROJECT THE WORLD TRADE CENTER

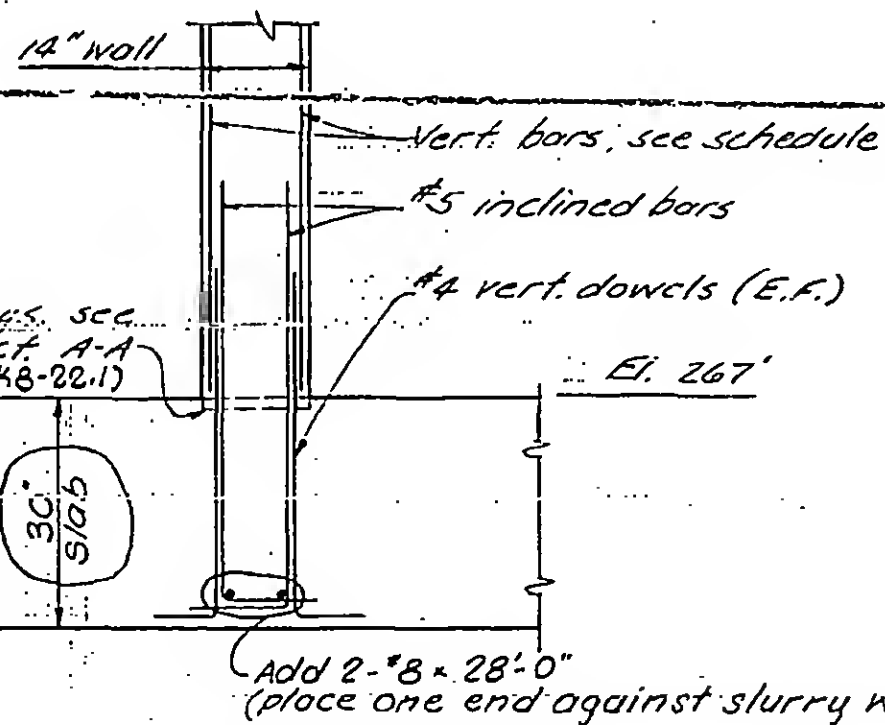
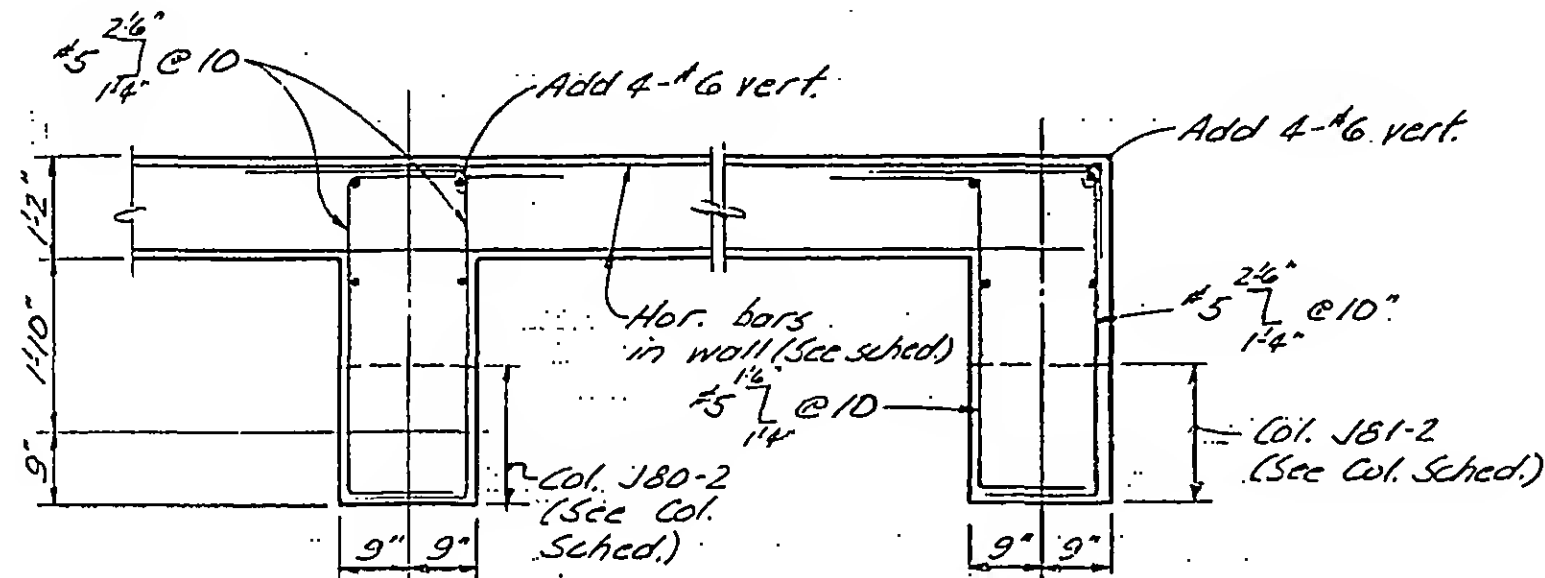
TITLE NORTH PROJECTION-SECTIONS

DATE 7-9-68

REVISIONS

3-7-69

7-16-69



Note:
See 8-JK8-22.1 for
location of sections.



DESIGNED

DRAWN

J. Adams

REVIEWED

E.L.

3-JK8-22.1

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PROJECT THE WORLD TRADE CENTER

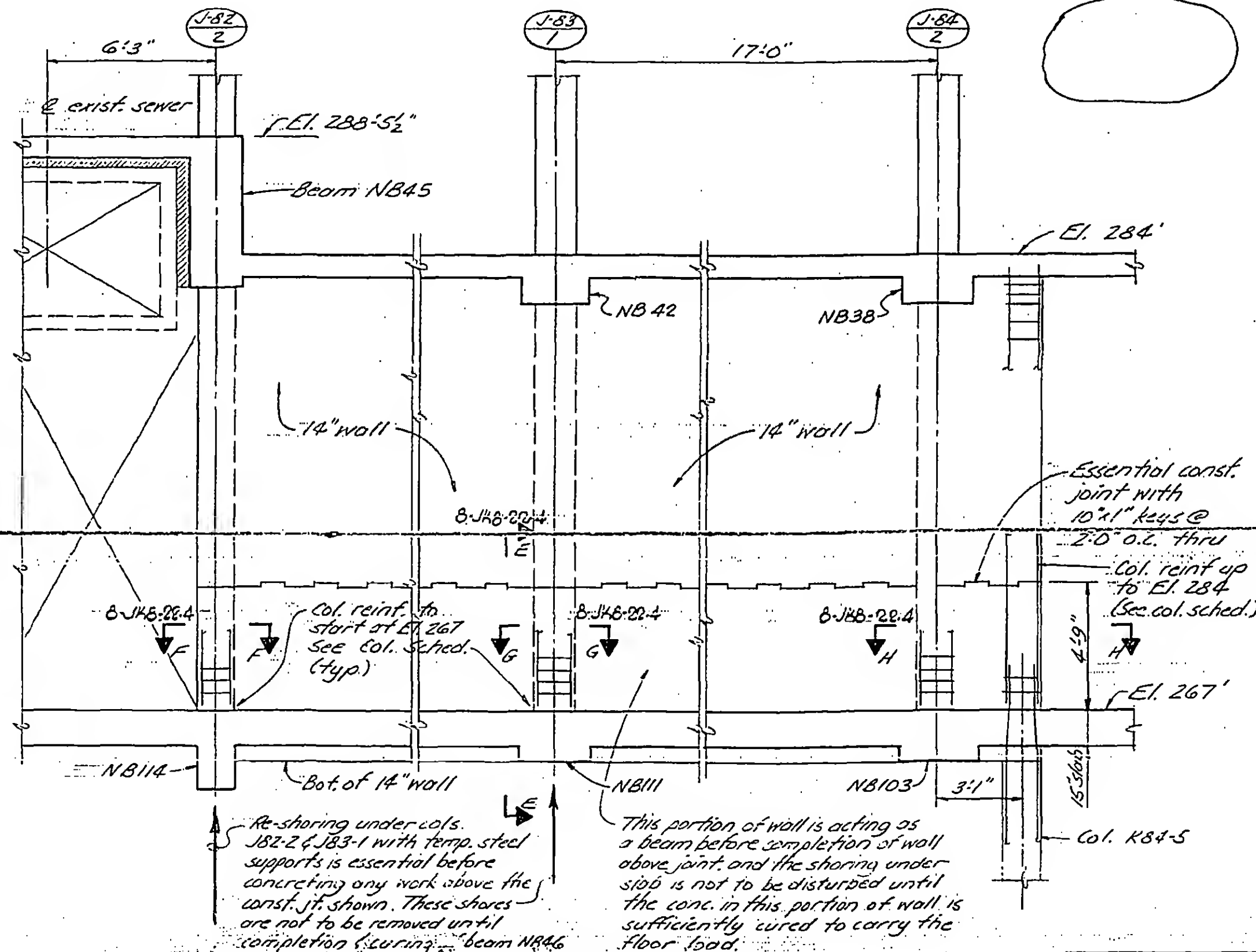
TITLE NORTH PROJECTION - SECTIONS

DATE 7-9-68

REVISIONS

3-7-69 GEN. REV.

10-30-69



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DRAWN

J. Adams

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PROJECT

THE WORLD TRADE CENTER

TITLE

NORTH PROJECTION - SECTIONS

DATE

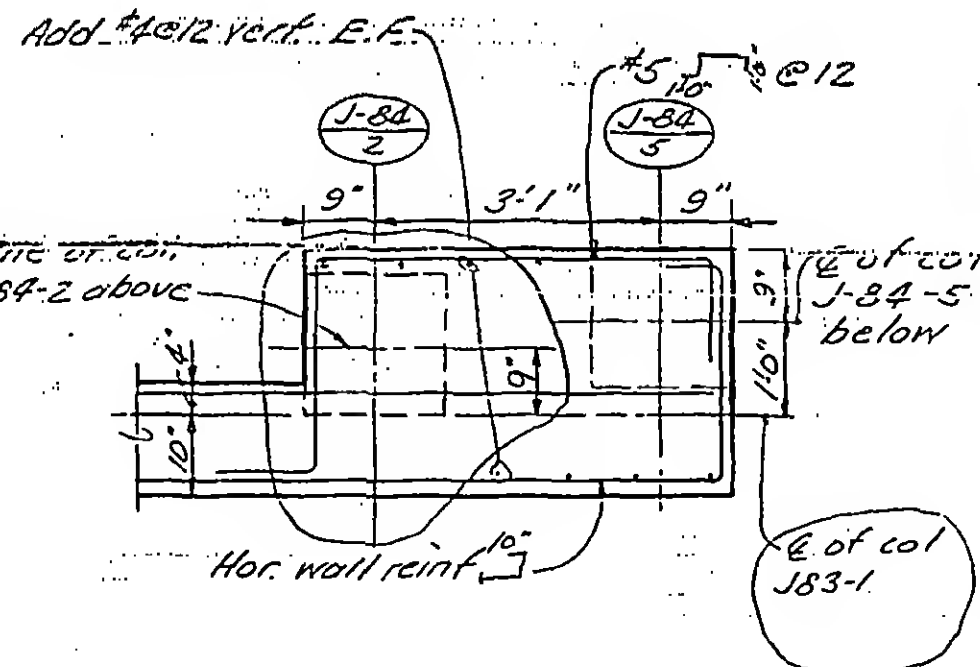
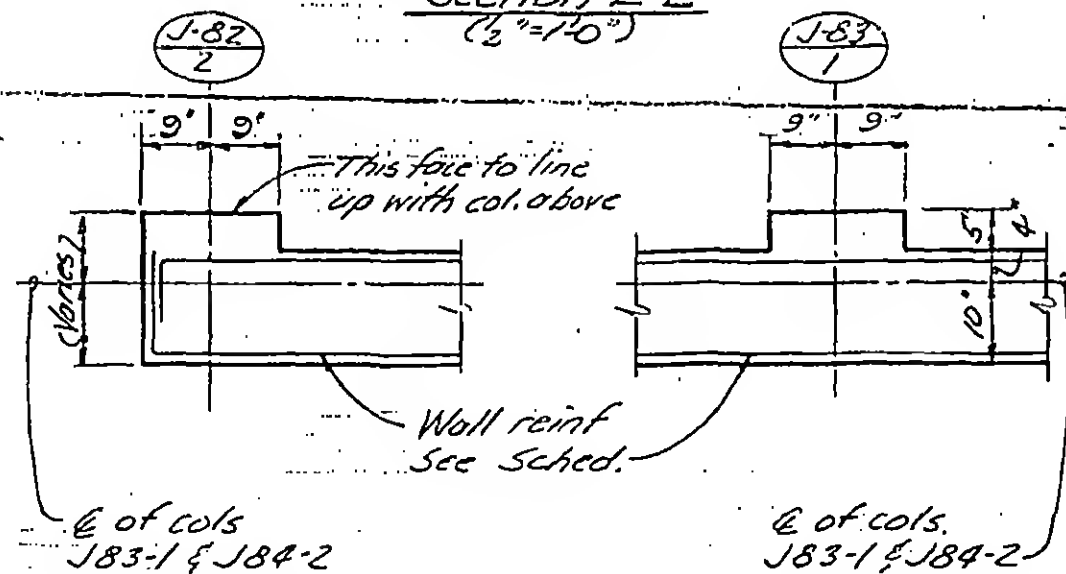
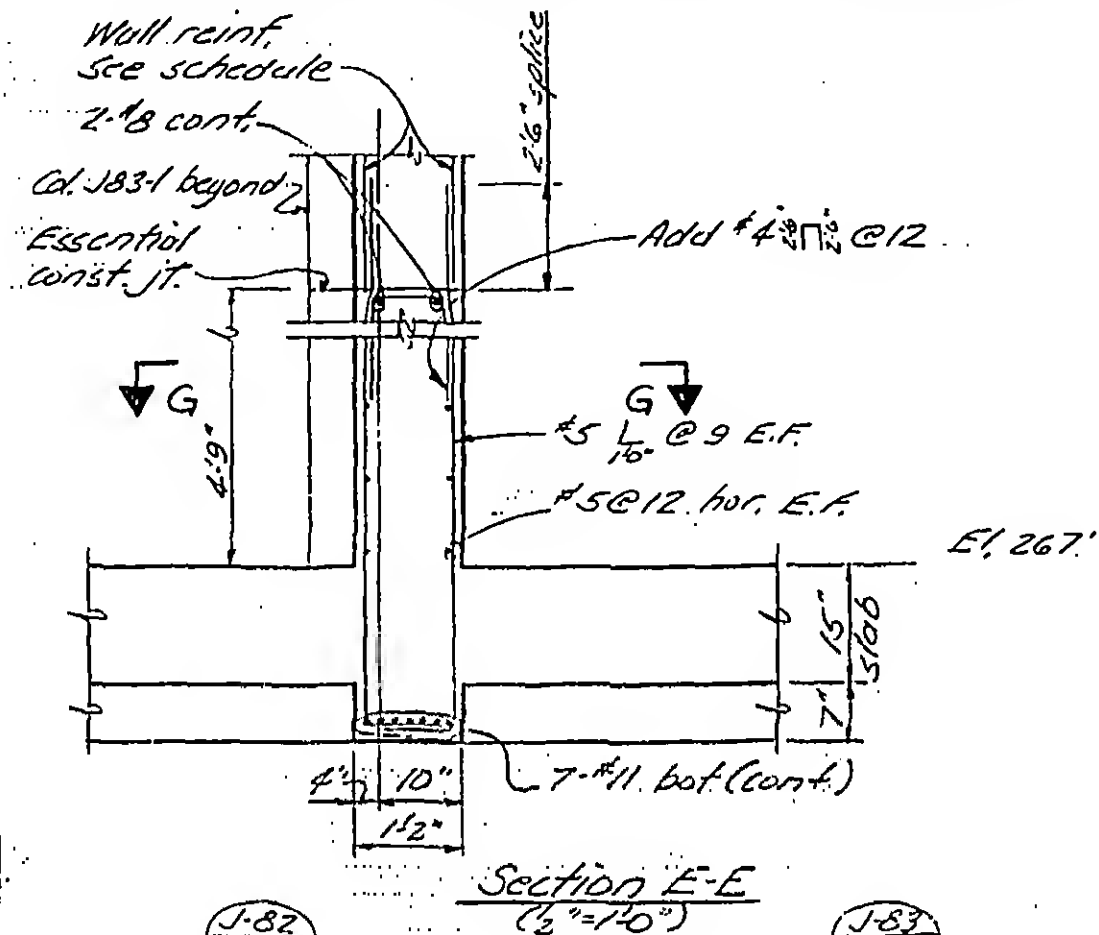
7-9-68

REVISIONS

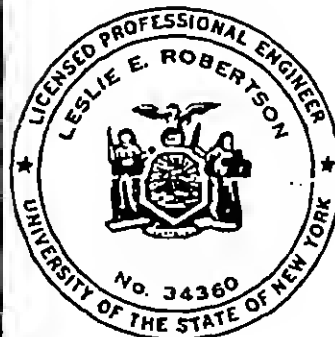
3-7-69

7-16-69

10-30-69



NOTE:

See 8-JK8-22.3 for
location of sections

DESIGNED

DRAWN

J. Adams

REVIEWED

E.L.

8-JK8-22.4

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Structural & Civil Engineers

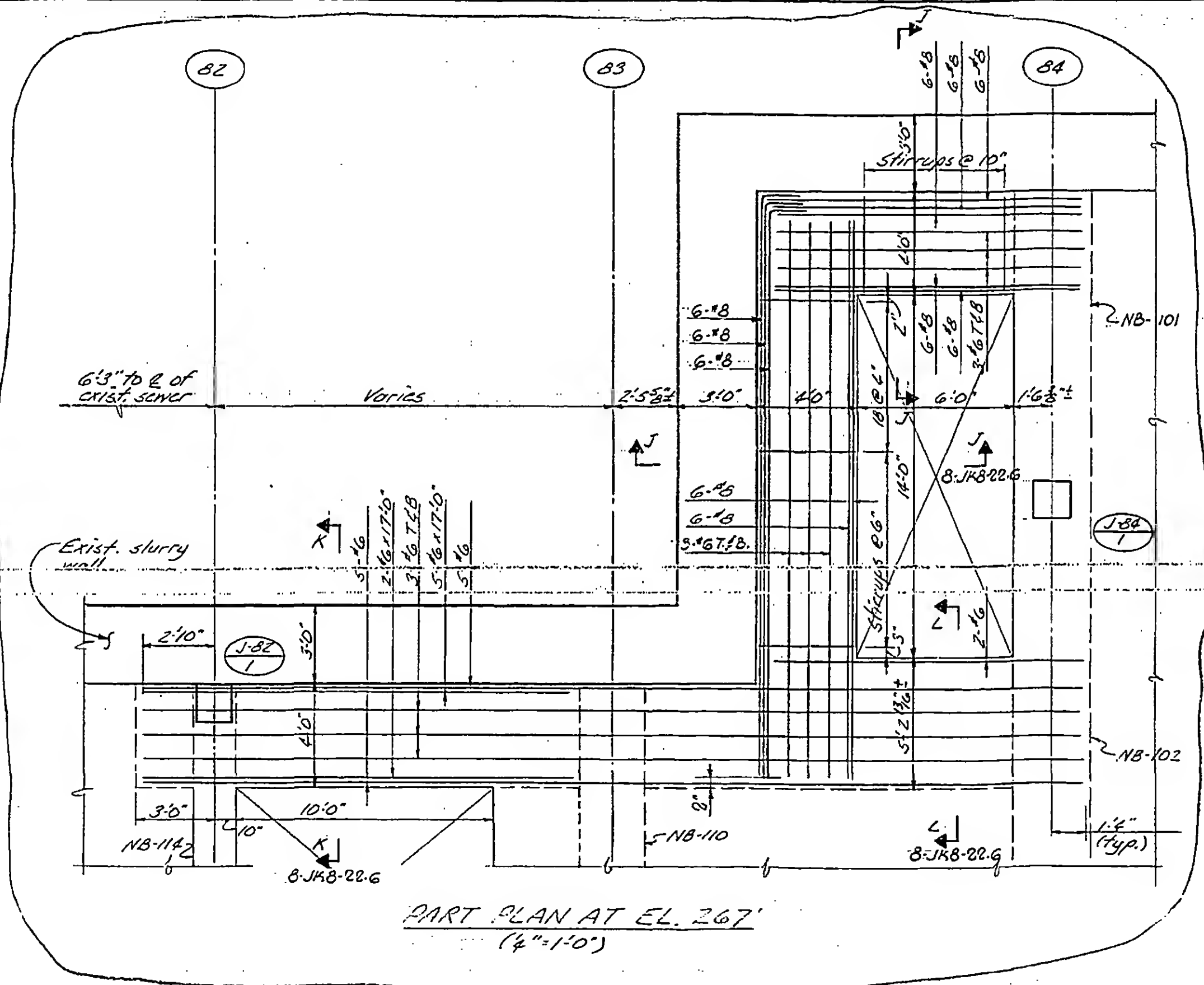
PROJECT THE WORLD TRADE CENTER

TITLE NORTH PROJECTION - SECTIONS

DATE 7-9-68

REVISIONS

5-7-69



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J.A.

REVIEWED

E.L.

8-JK8-22.5

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

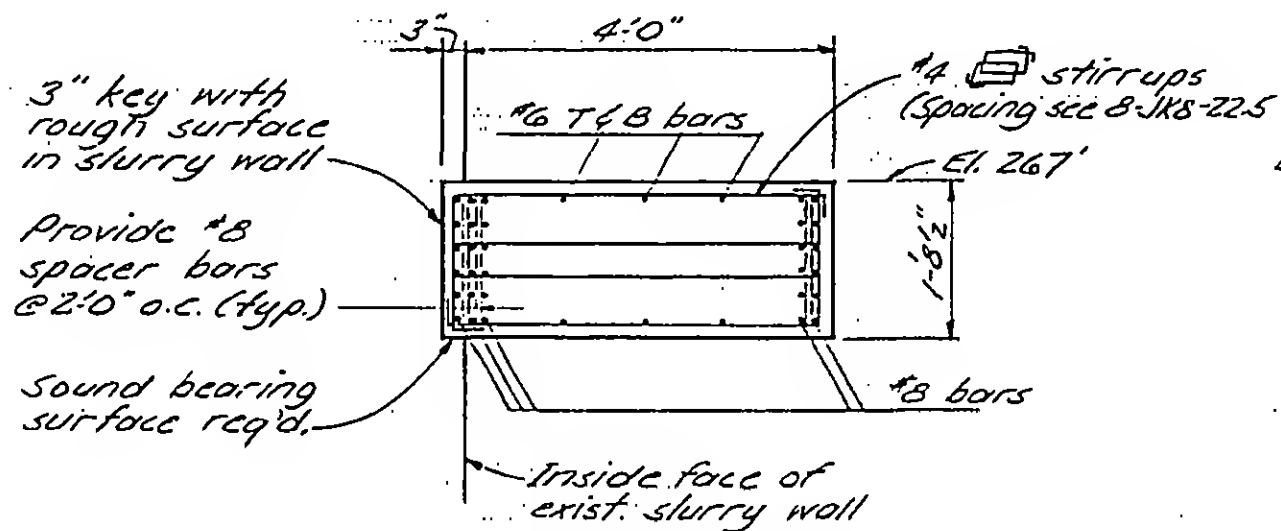
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

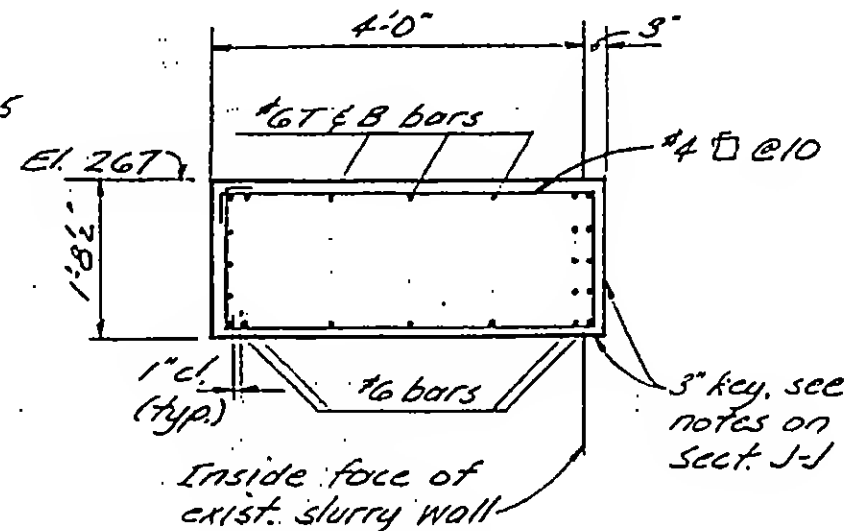
TITLE NORTH PROJECTION - SECTIONS

DATE 3-7-69

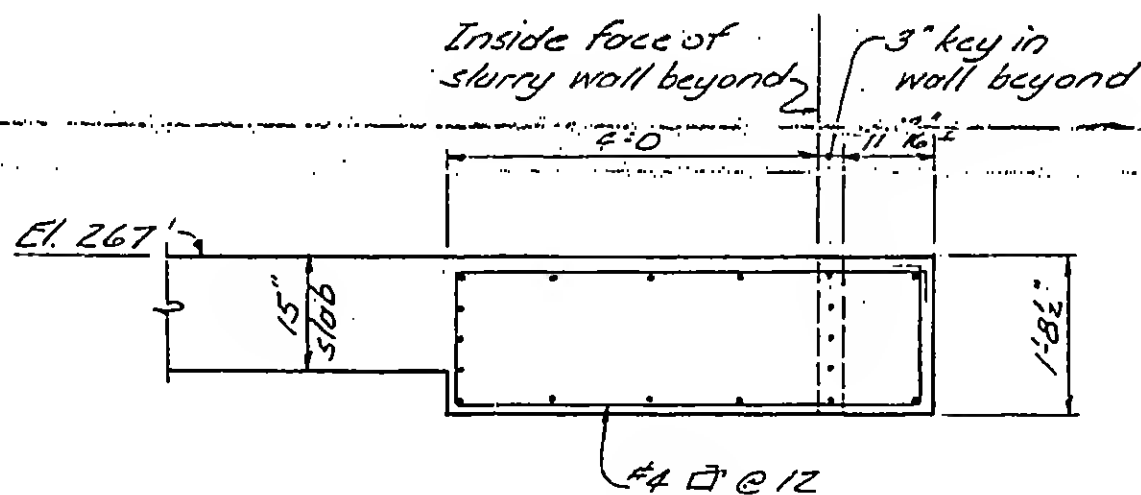
REVISIONS



Section J-J
($\frac{1}{2}'' = 1'-0''$)



Section K-K
($\frac{1}{2}'' = 1'-0''$)



Section L-L
($\frac{1}{2}'' = 1'-0''$)

NOTE

See 8-JK8-22.5 for location of sections.



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DRAWN
J.A.REVIEWED
E.L.

8-JK8-22.6

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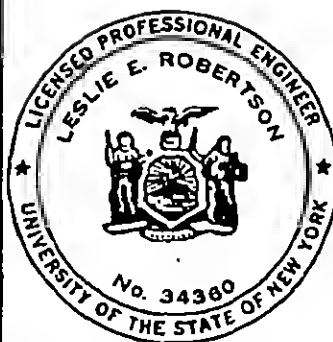
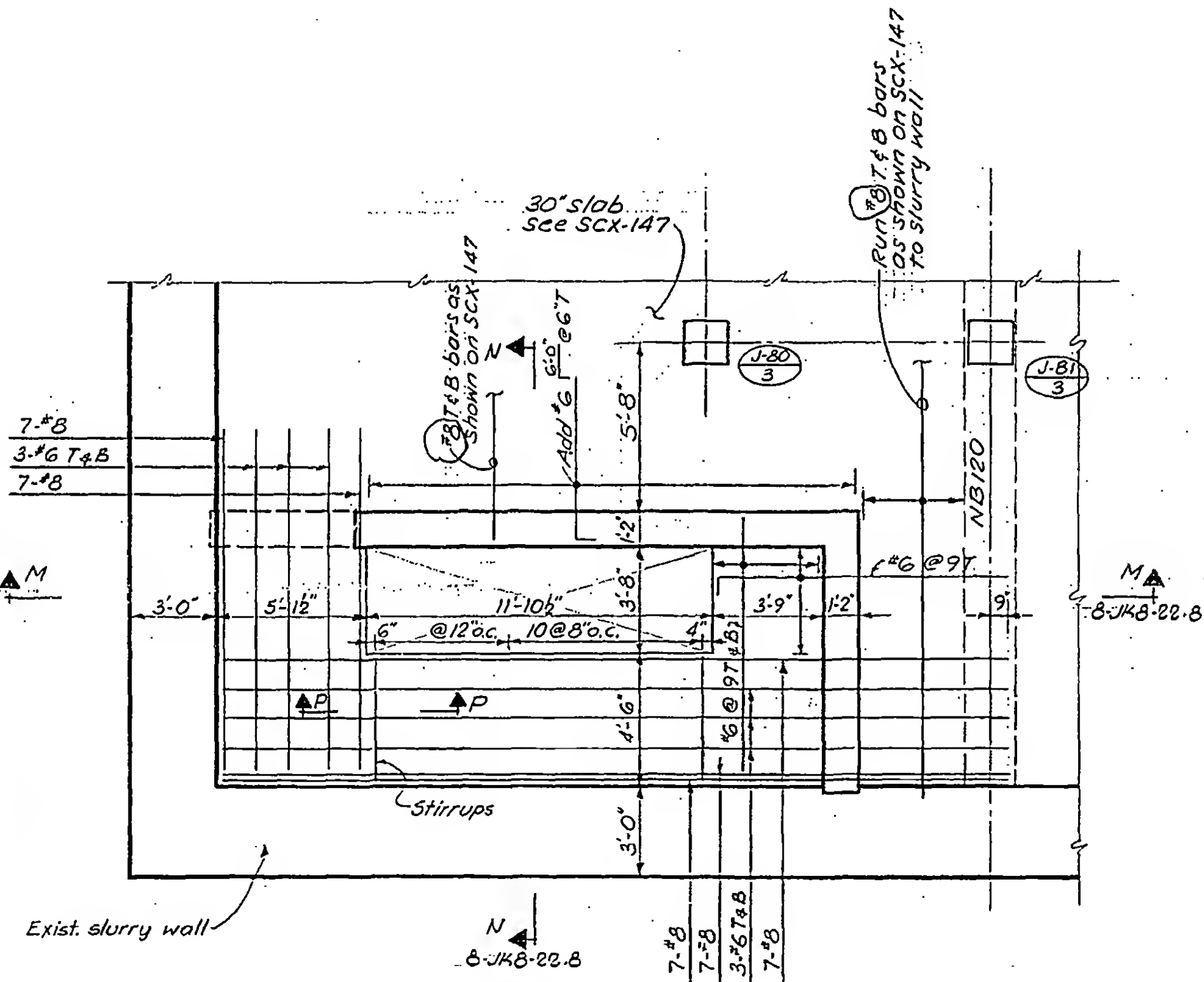
TITLE NORTH PROJECTION SECTIONS

DATE 3-7-69

REVISIONS

7-16-69

8-8-69



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DRAWN J. Gricius

REVIEWED E.L.

PART PLAN AT EL. 267

1/4" = 1'-0"

8-JKB-22.7

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

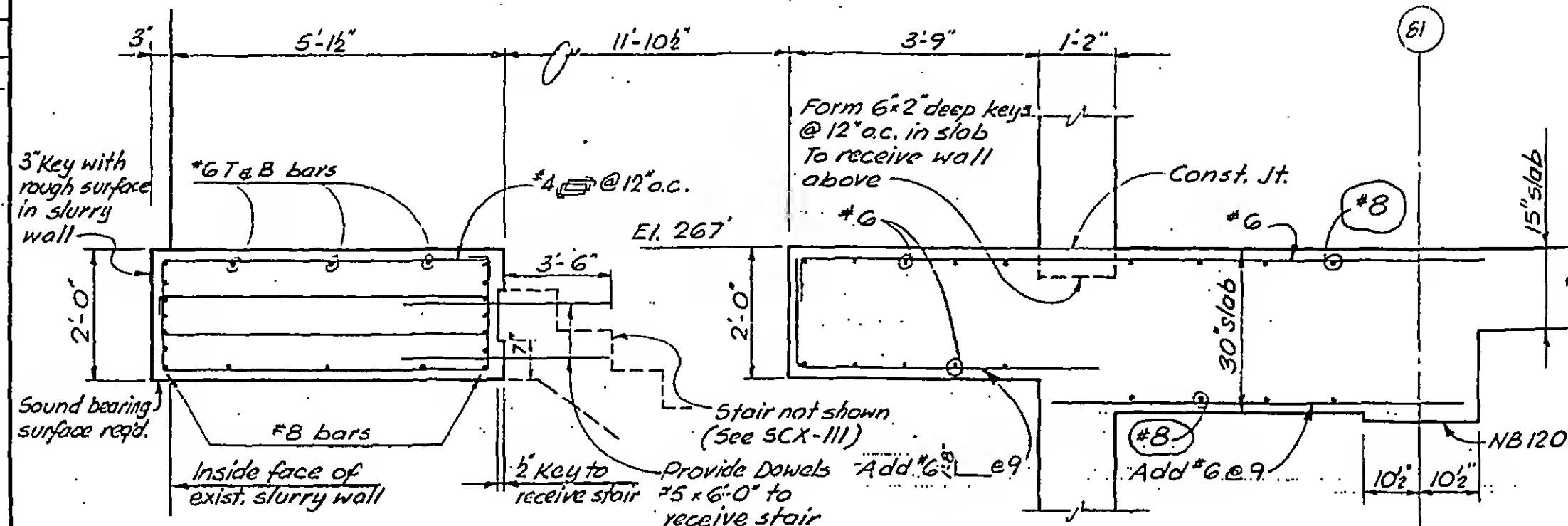
TITLE NORTH PROJECTION SECTIONS

DATE 3-7-69

REVISIONS

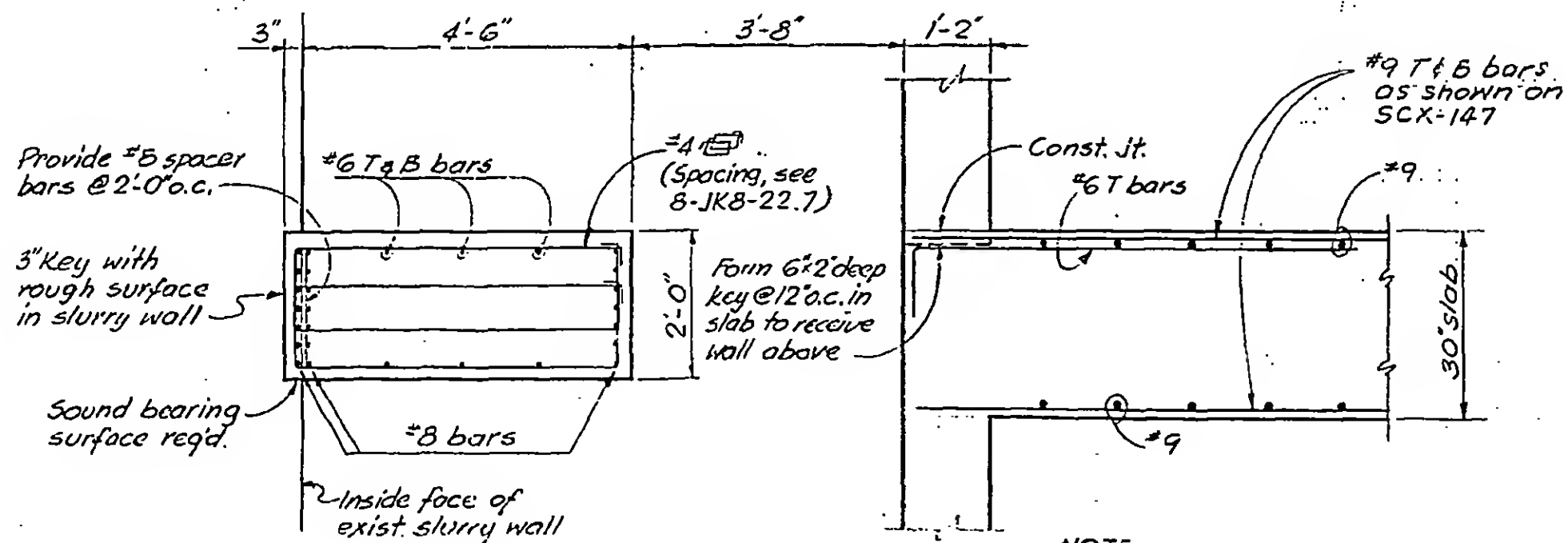
7-16-69

8-8-69



Section M-M

1/2" = 1'-0"



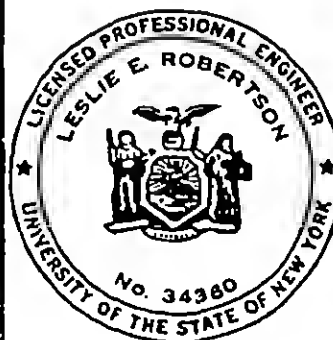
Section N-N

1/2" = 1'-0"

NOTE

See 8-JK8-22.7 for location of sections.

8-JK8-22.8



DESIGNED

DRAWN
J. GriciusREVIEWED
E.L.

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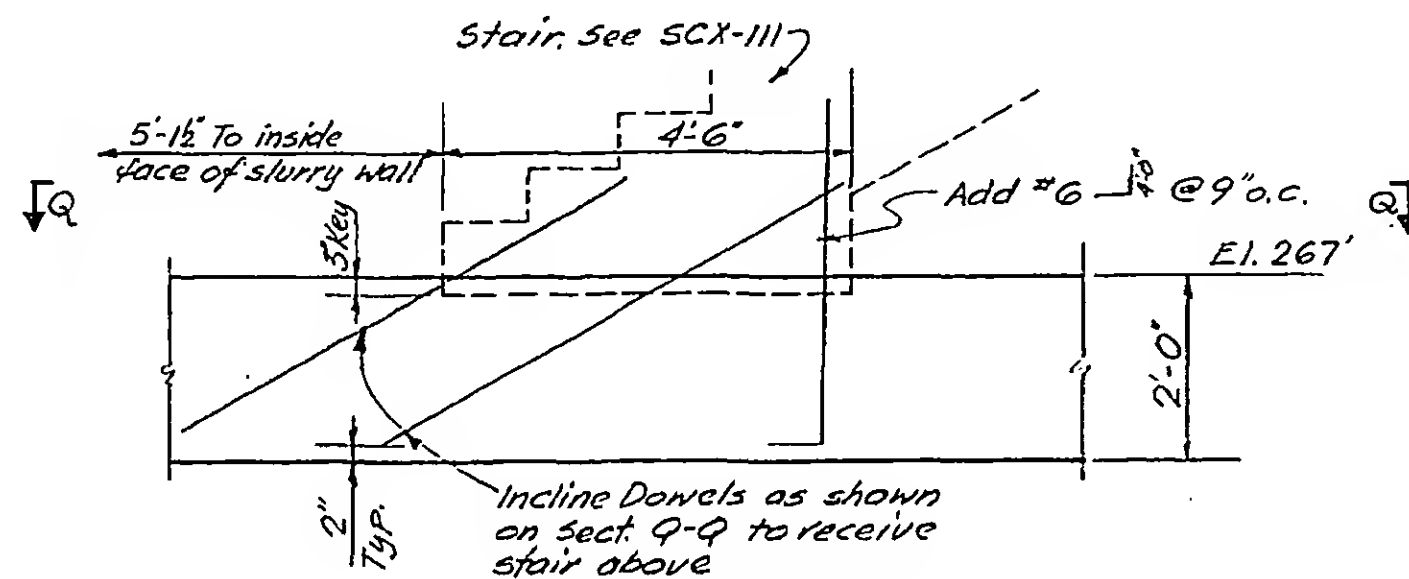
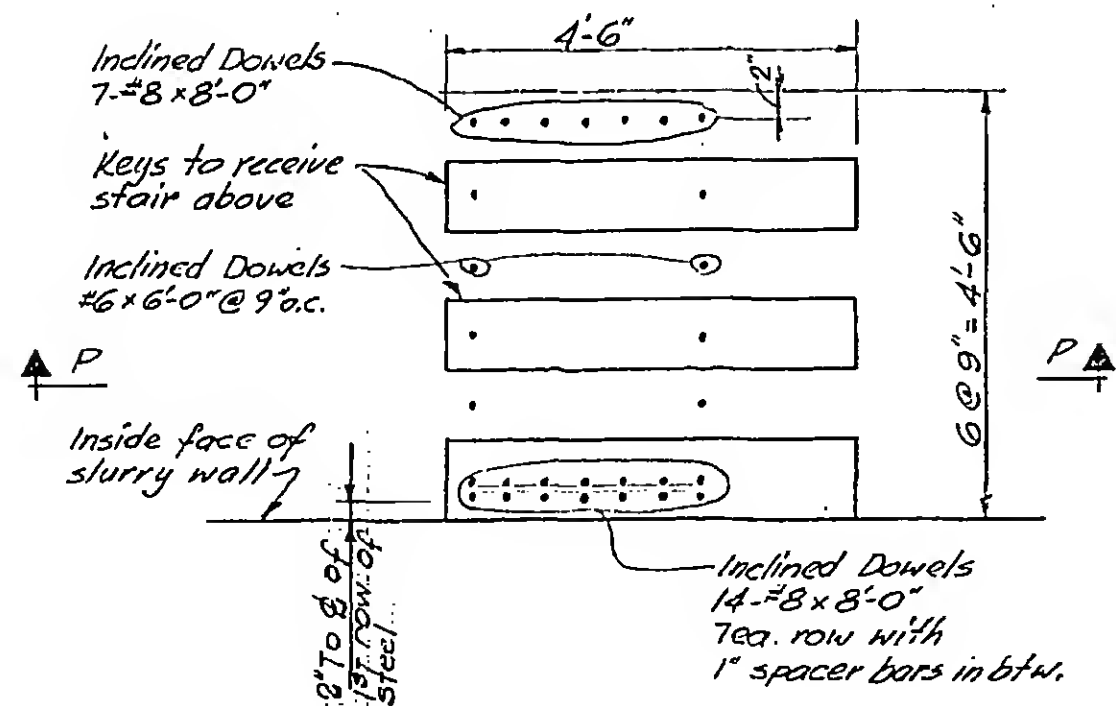
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE NORTH PROJECTION SECTIONS

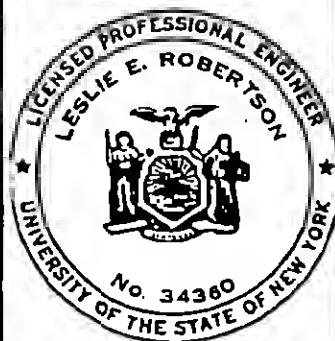
DATE 3-7-69

REVISIONS

Section P-PSection Q-Q

h" = 1'-0"

8-JKB-22.9



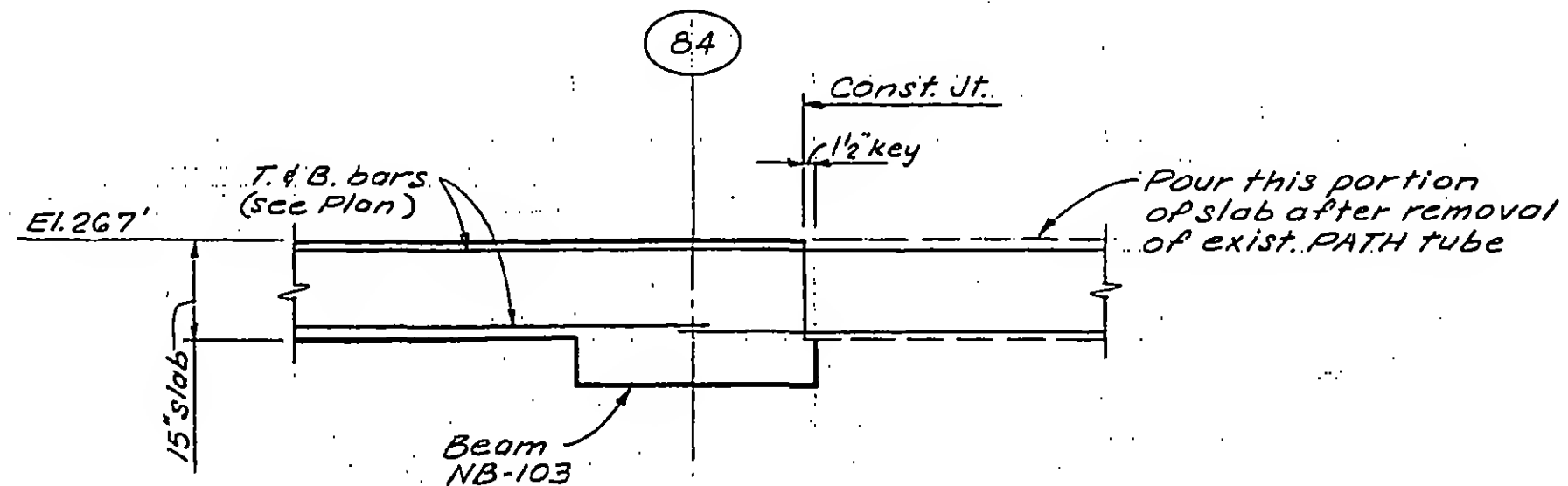
DESIGNED

DRAWN
J. Gricius

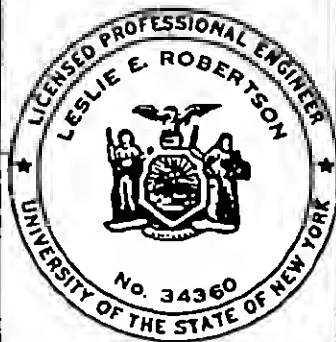
REVIEWED

E.L.

REVISIONS



Section R-R
(SCJ-42)



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DRAWN
S.C.

REVIEWED
E.L.

8-JKB-22.10

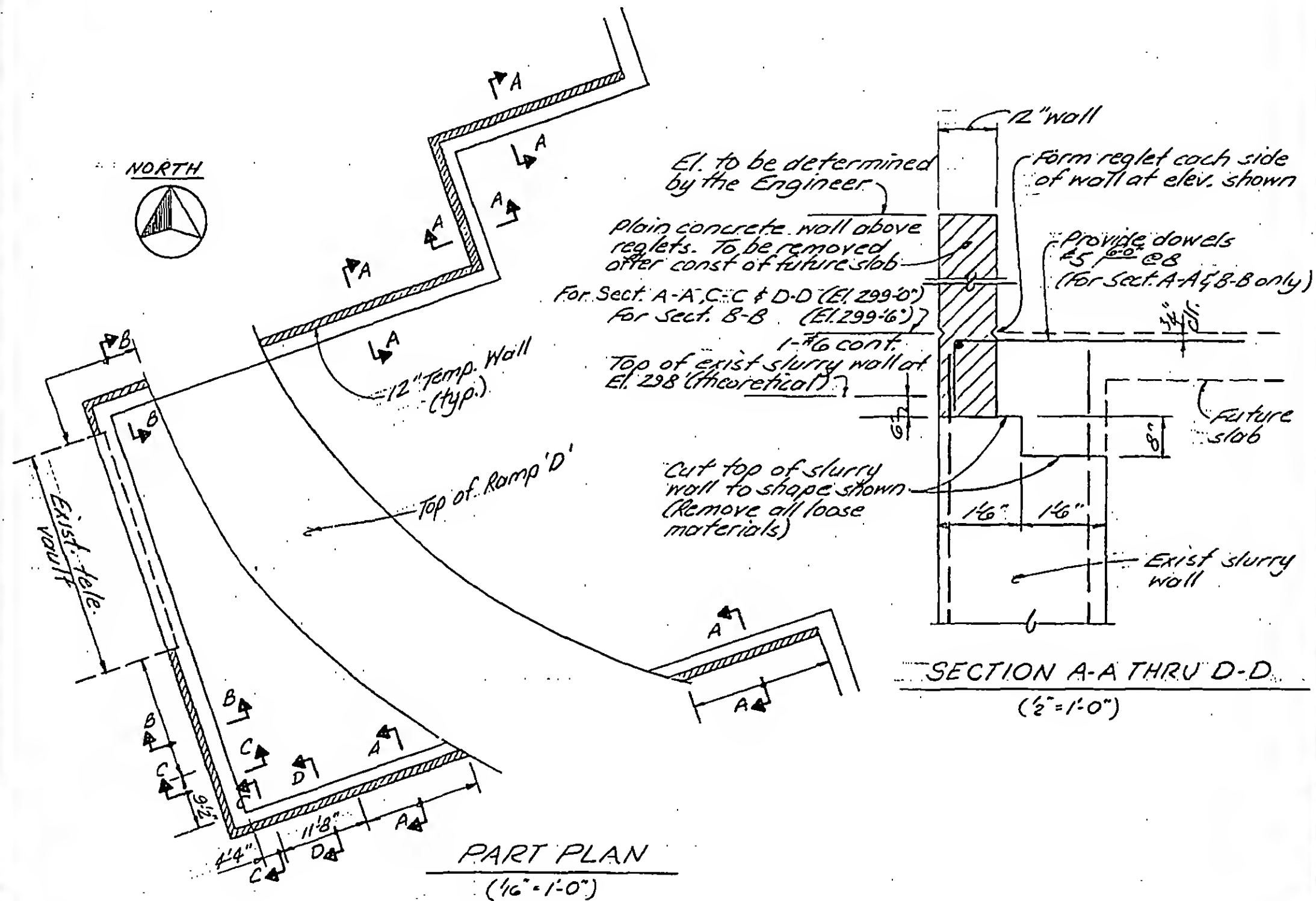
PROJECT THE WORLD TRADE CENTER

TITLE N. PROJECTION - TEMP. WALL OVER TOP OF SLURRY WALL

DATE 10-17-69

REVISIONS

NORTH



DESIGNED

DRAWN

J. Adams

REVIEWED

E.L.

8-JK8-22:11

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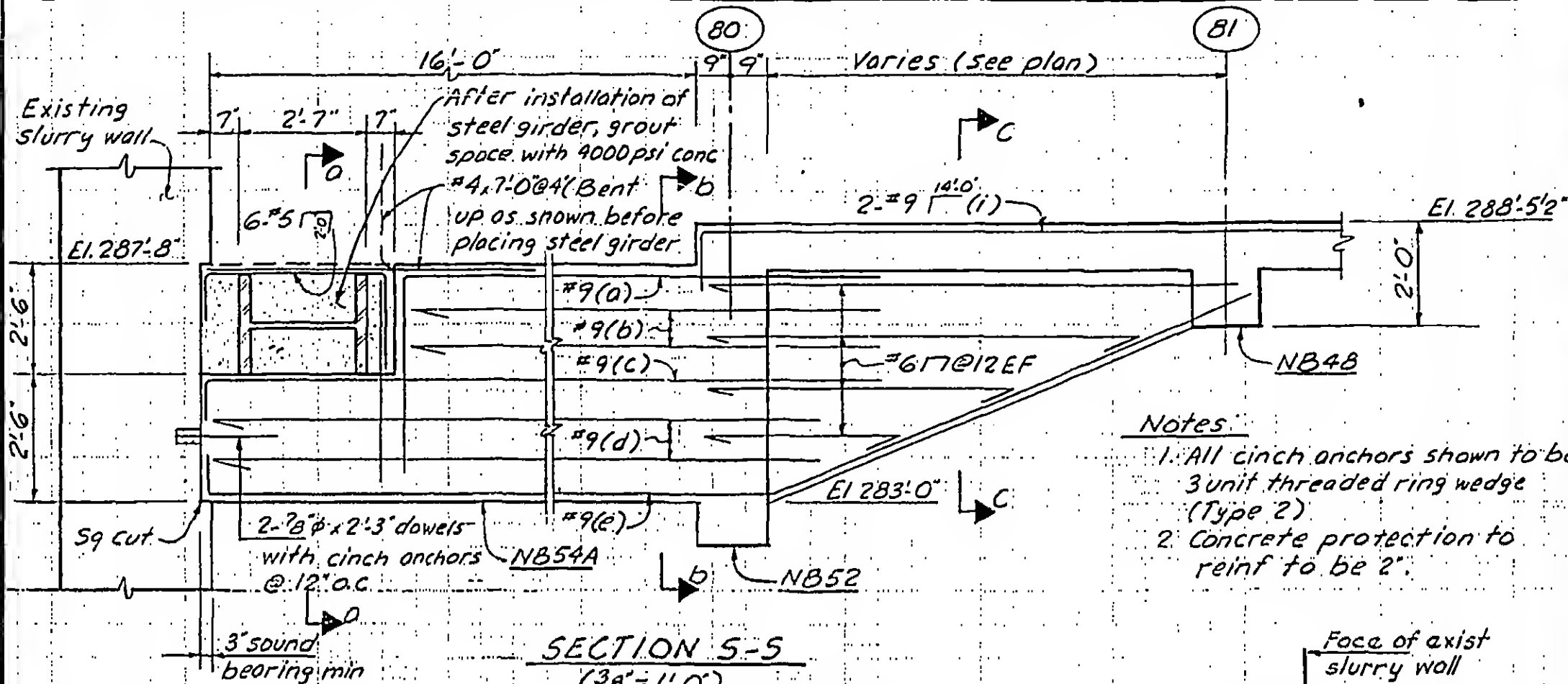
PROJECT THE WORLD TRADE CENTER

TITLE

NORTH PROJECTION-SECTIONS

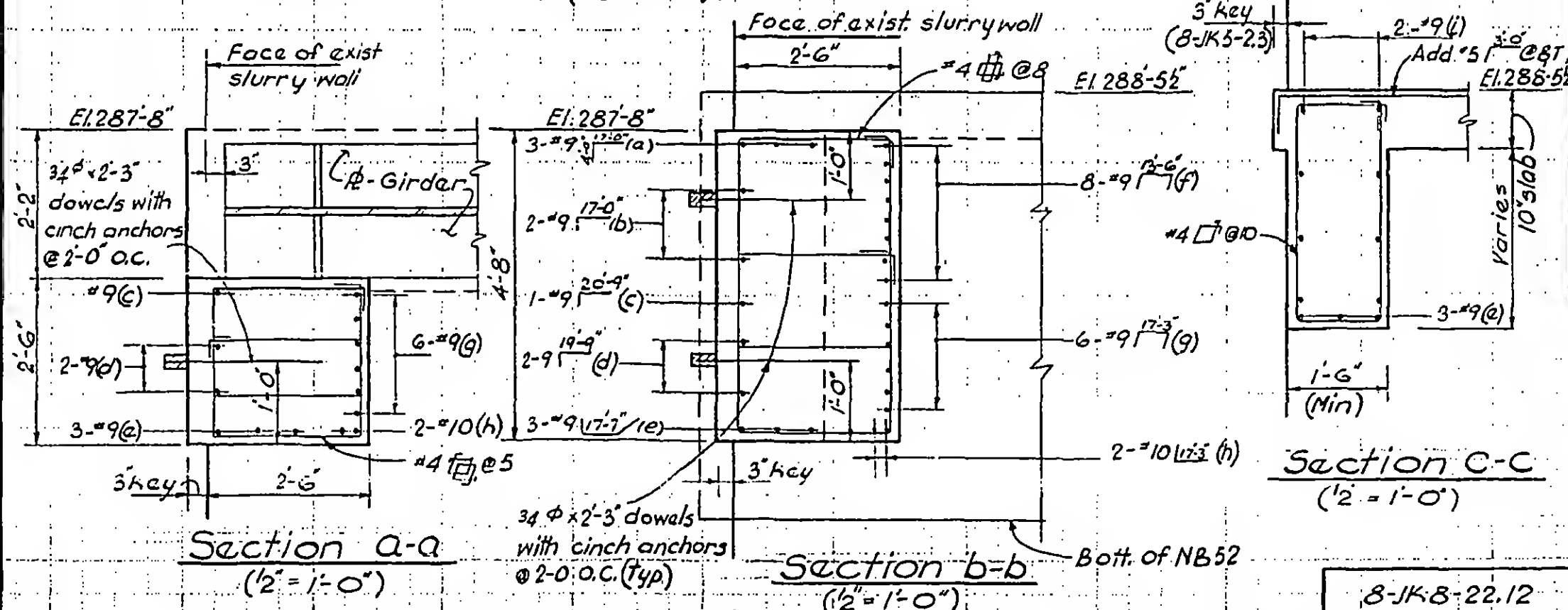
DATE 10-30-69

REVISIONS

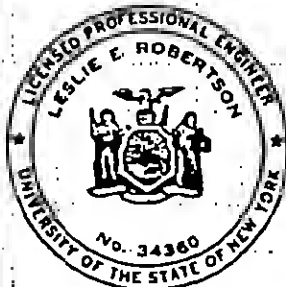
4-8-70 GEN.
REV.

Notes:

1. All cinch anchors shown to be 3 unit threaded ring wedge (Type 2)
2. Concrete protection to reinf to be 2".

Section C-C
(12' = 1'-0')

8-JK-8-22.12



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DRAWN
D. Huggins

REVIEWED

E.L.

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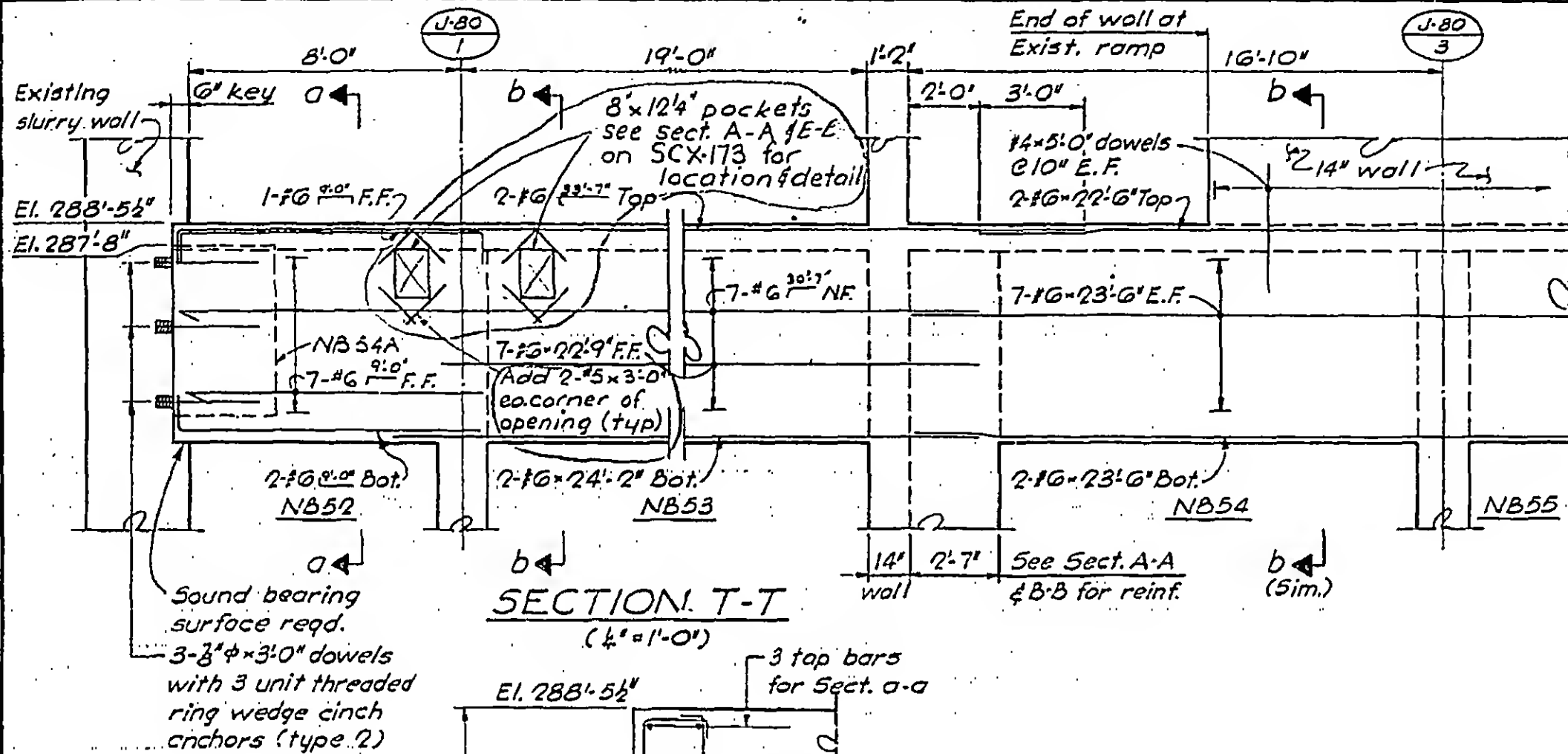
TITLE NORTH PROJECTION-SECTIONS

DATE 10-30-69

REVISIONS

4-8-70

6-25-70



SECTION a-a

SECTION b-b

(1/2" = 1'-0")



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E. L.

DRAWN

G. K.

REVIEWED

8-JK8-22.13

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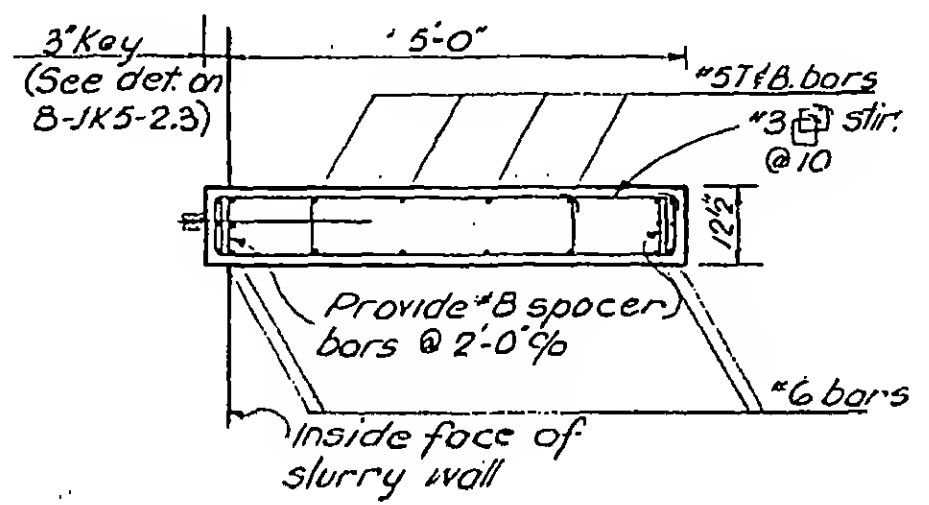
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

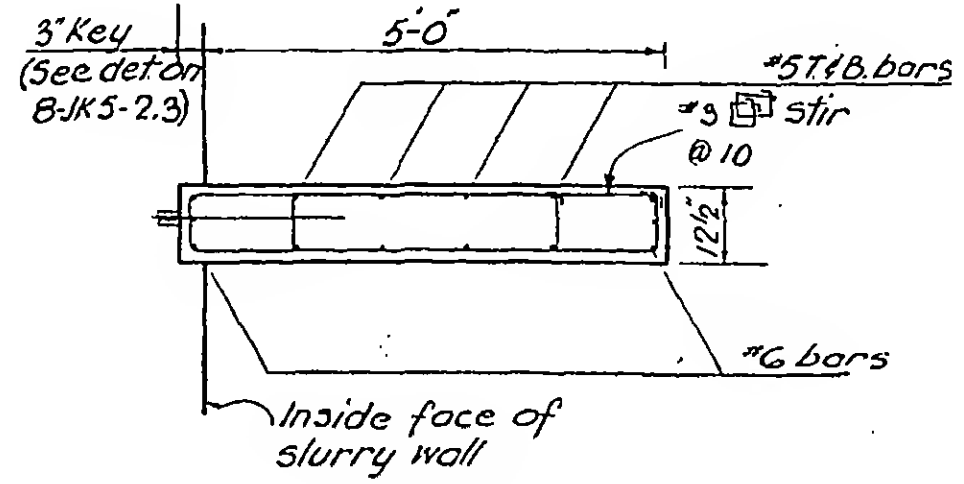
TITLE NORTH PROJECTION - SECTIONS

DATE 10-31-69

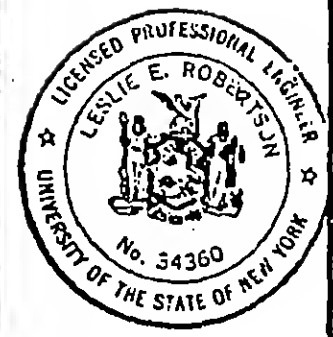
REVISIONS



SECTION U-U
(12" = 1'-0")



SECTION V-V
(12" = 1'-0")



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REVIEWED
E.L.

8-JK 8-22.14

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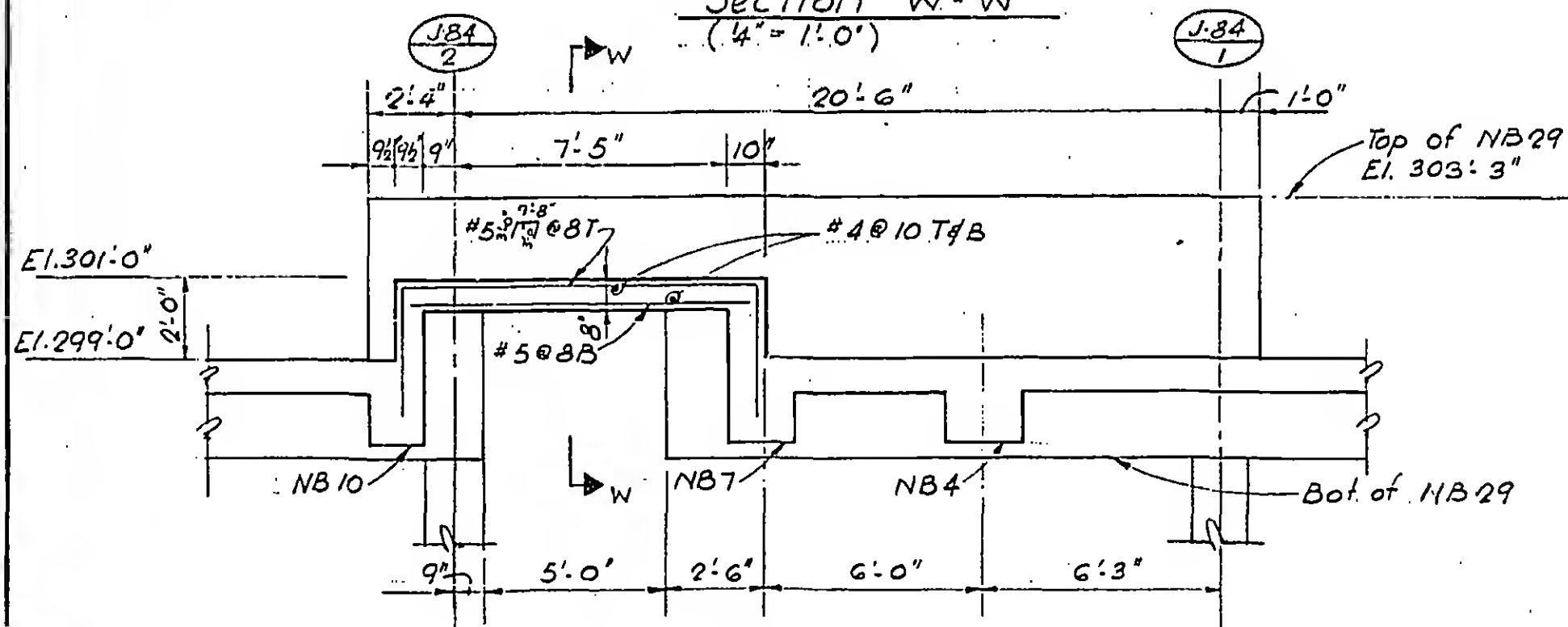
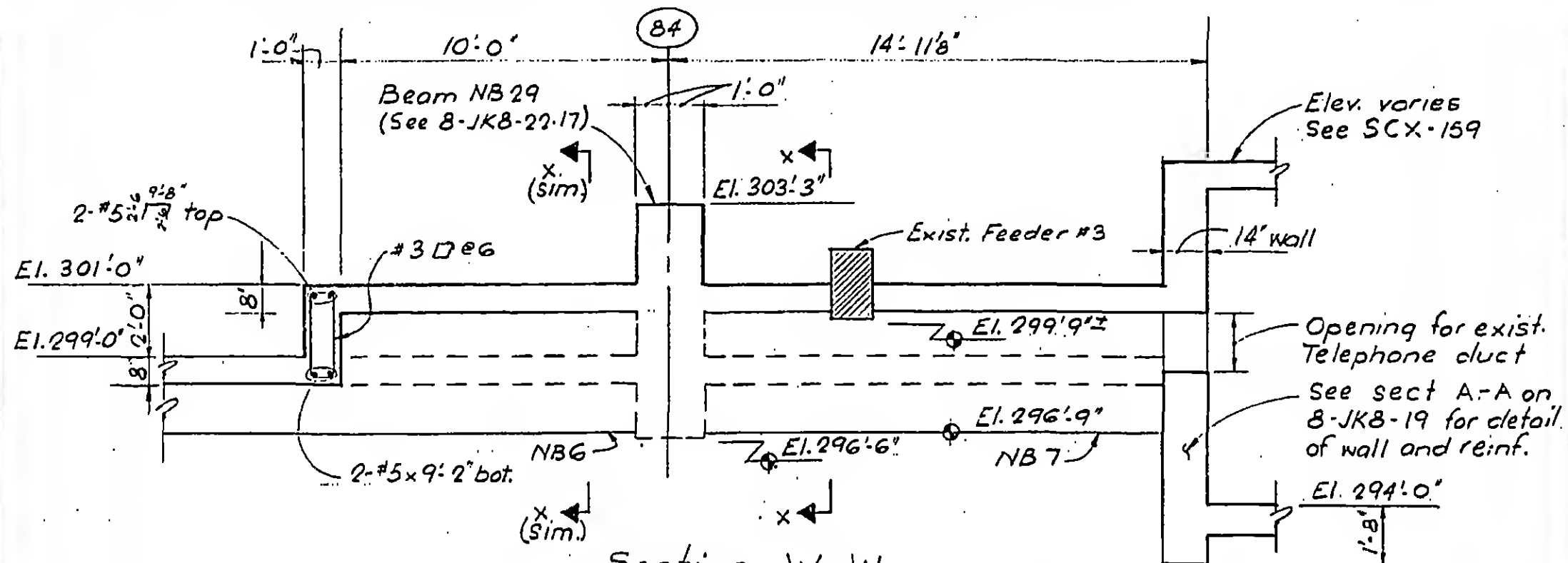
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PROJECT THE WORLD TRADE CENTER

TITLE NORTH PROJECTION - SECTIONS.

DATE 3-16-70

REVISIONS

6-25-70 GEN.
REV.

DESIGNED

T. Terrelonge

REVIEWED

E. LIU

8-JK8-22.15

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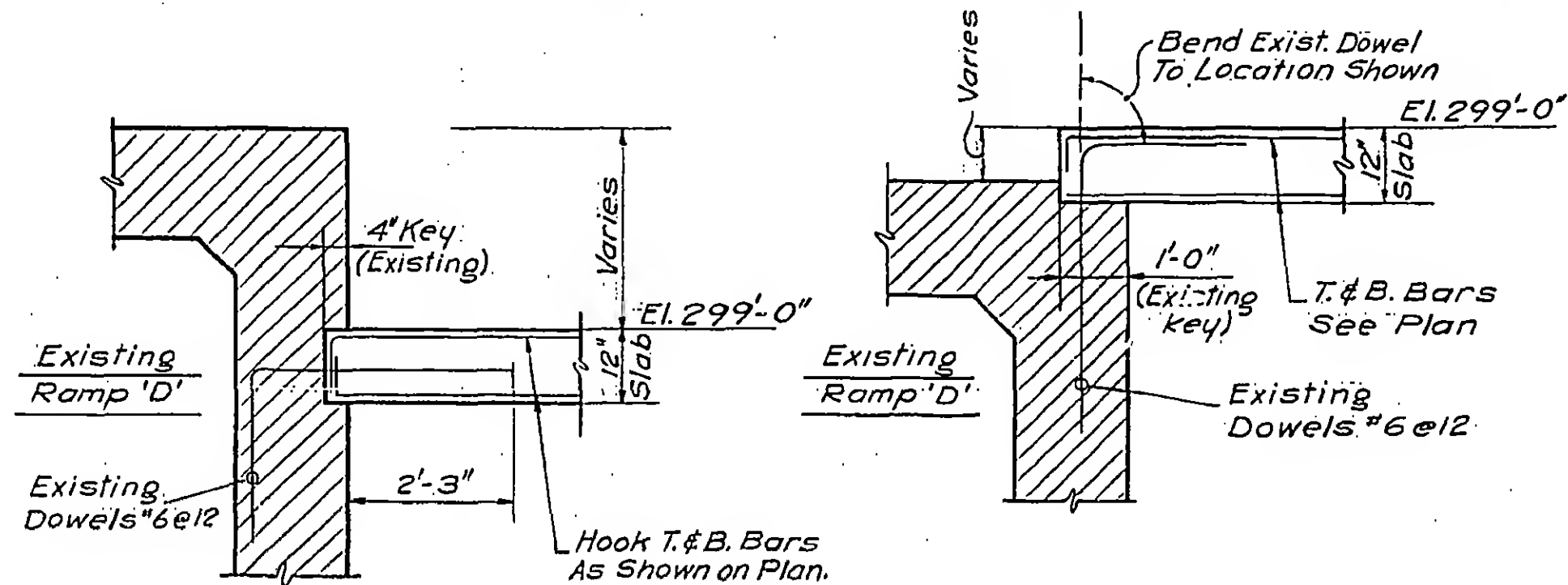
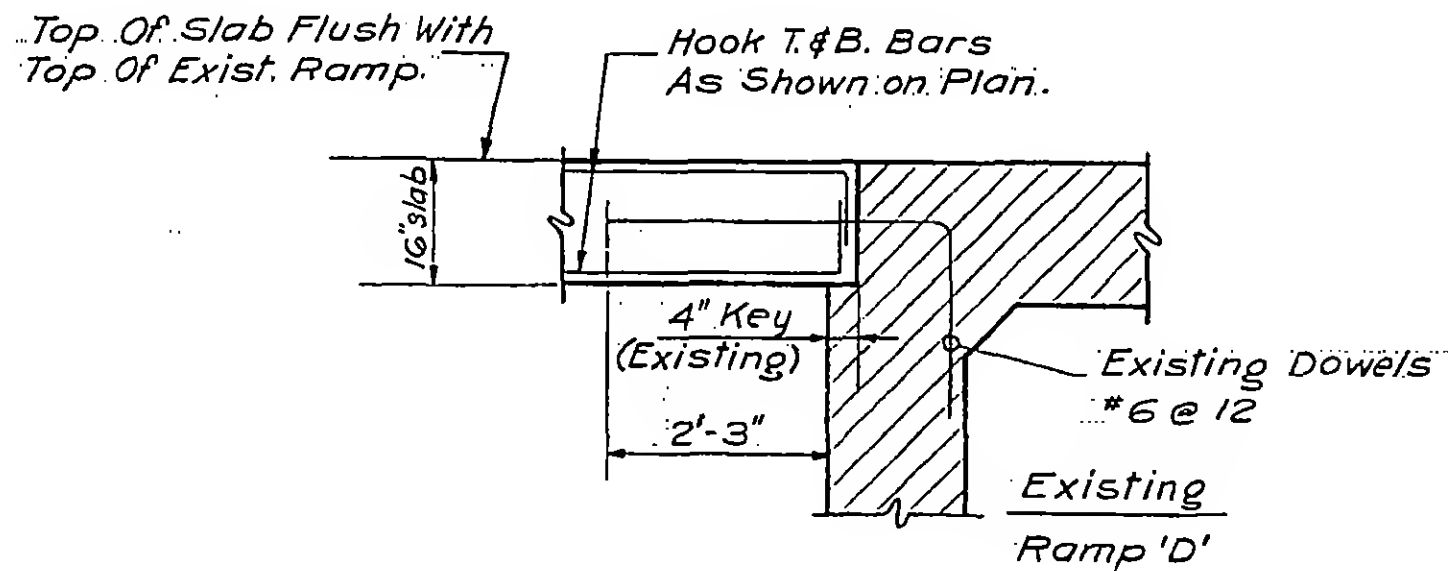
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE NORTH PROJECTION - SECTIONS

DATE 3-16-70

REVISIONS

Section Y-Y
(1/2" = 1'-0")Section Y'-Y'
(1/2" = 1'-0")Section Z-Z
(1/2" = 1'-0")

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DRAWN

V. H. A.

REVIEWED

E. L.

8-JK8-22.16

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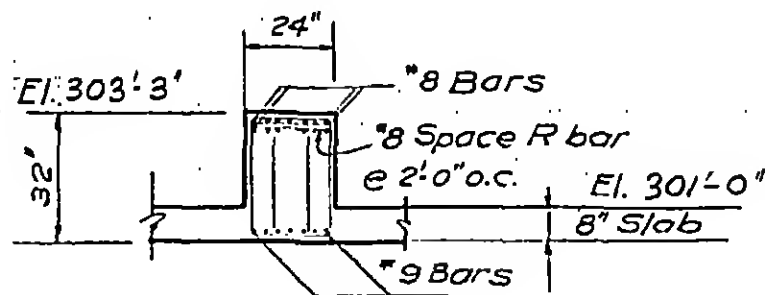
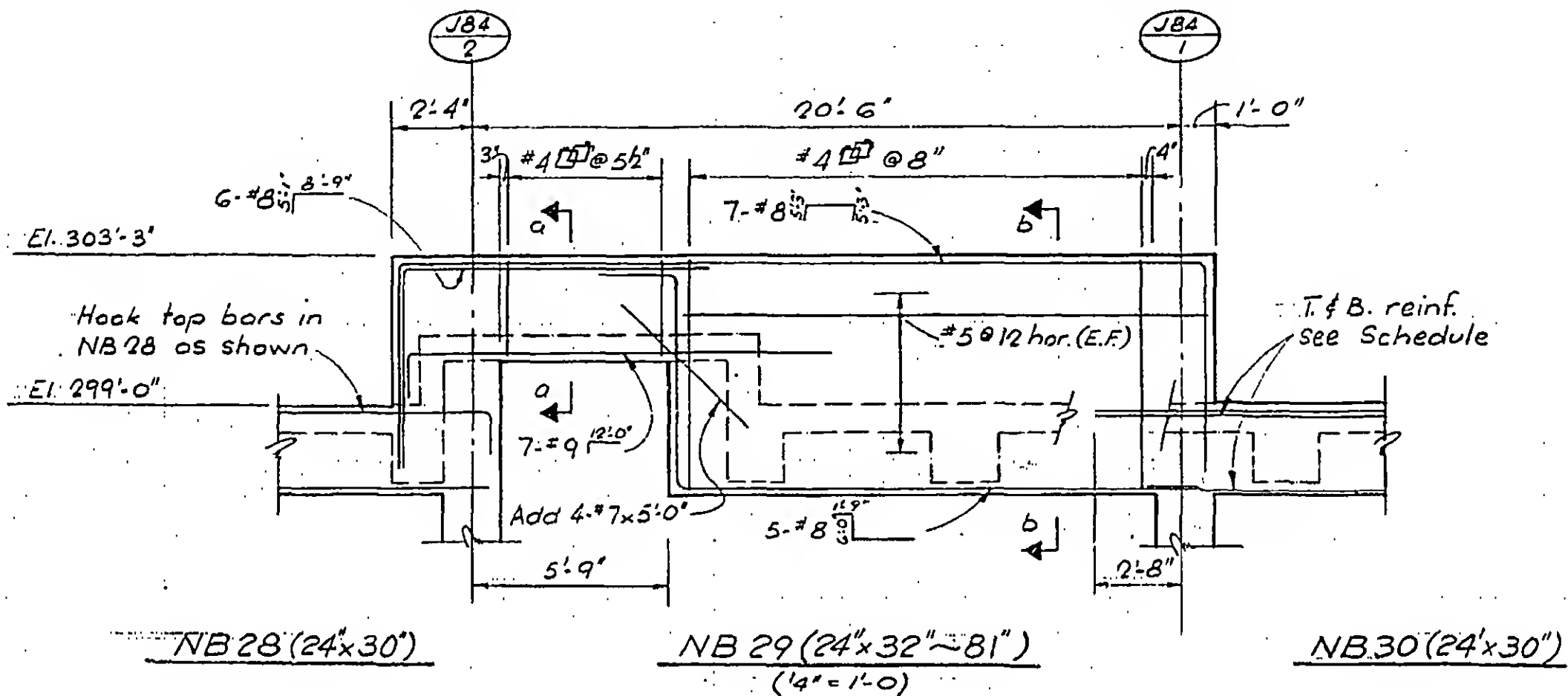
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PROJECT THE WORLD TRADE CENTER

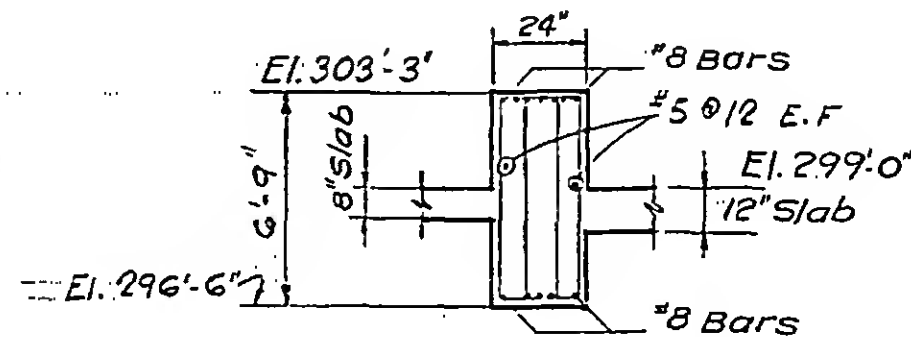
TITLE NORTH PROJECTION-SECTIONS

DATE 3-16-70

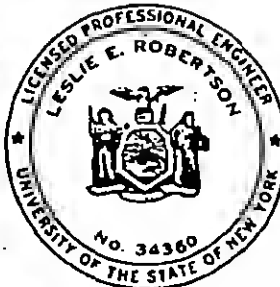
REVISIONS

6-25-70 GEN.
REV.

Section a-a



Section b-b



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V.H.A.

REVIEWED

E.L.

8-JK8-22.17

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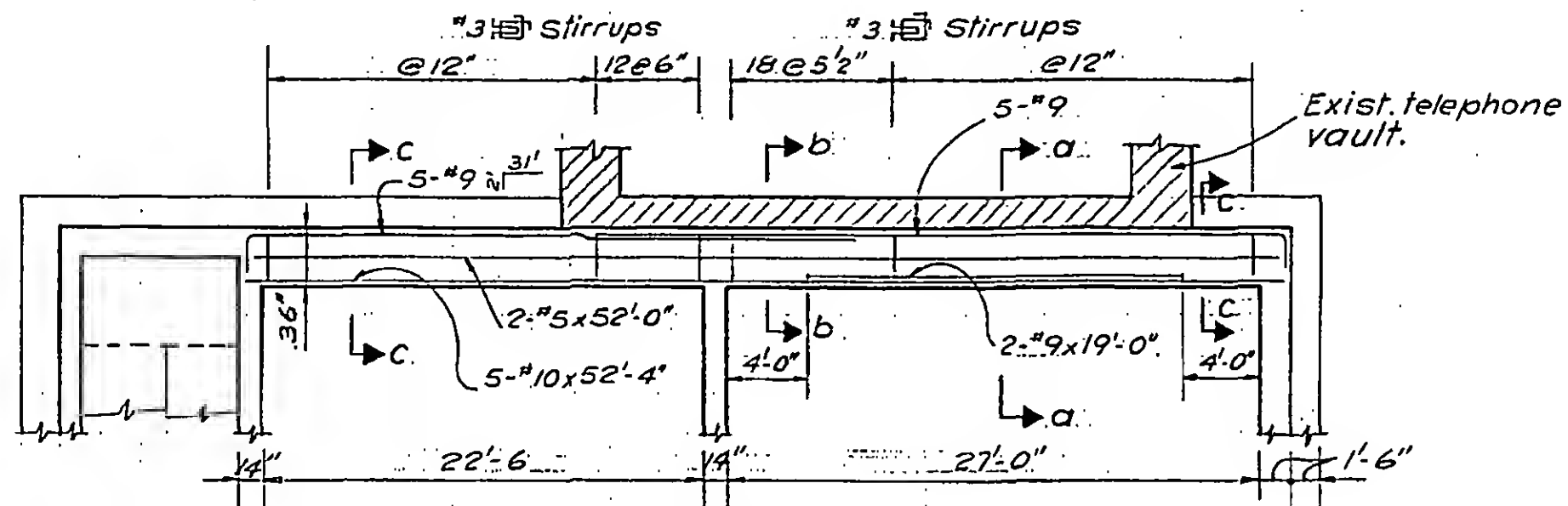
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PROJECT THE WORLD TRADE CENTER

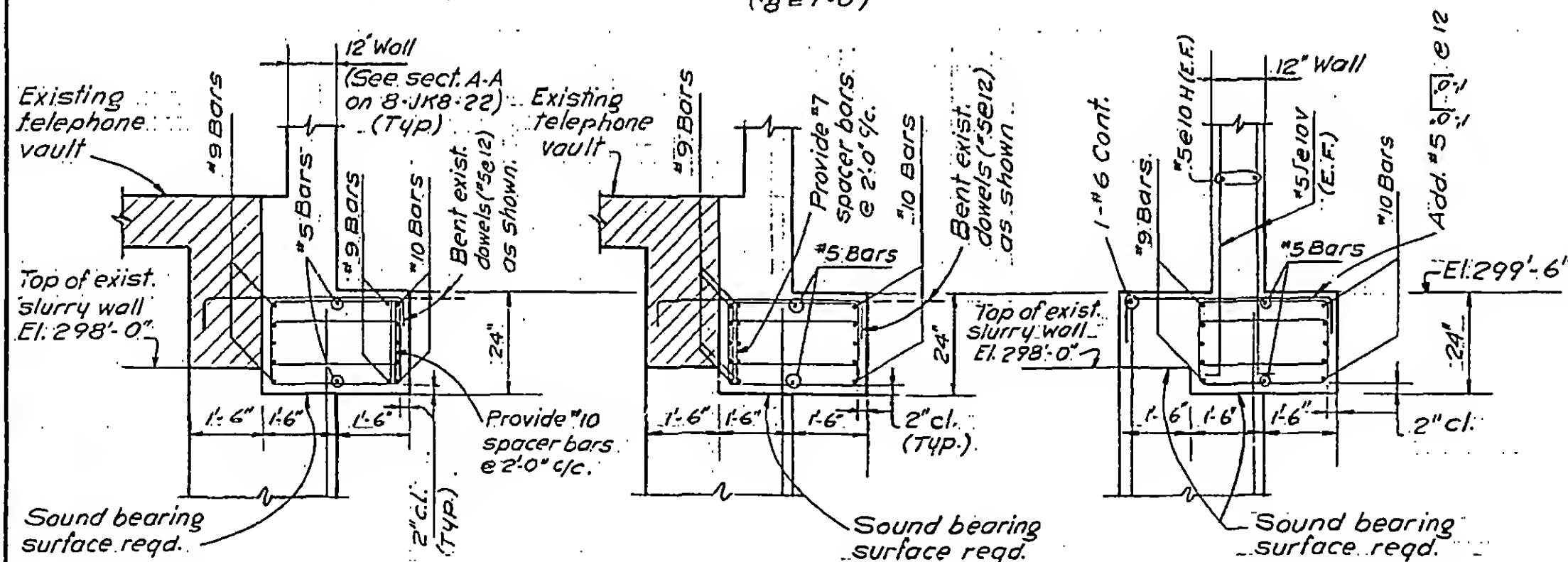
TITLE NORTH PROJECTION - SECTIONS

DATE 3-16-70

REVISIONS



PLAN
(1/8" = 1'-0")



Section a-a

(3/8" = 1'-0")

Section b-b

(3/8" = 1'-0")

Section c-c

(3/8" = 1'-0")



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DRAWN
V.H.A.REVIEWED
E.L.

8-JK8-22.18

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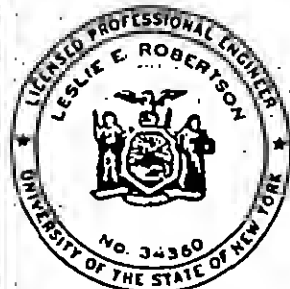
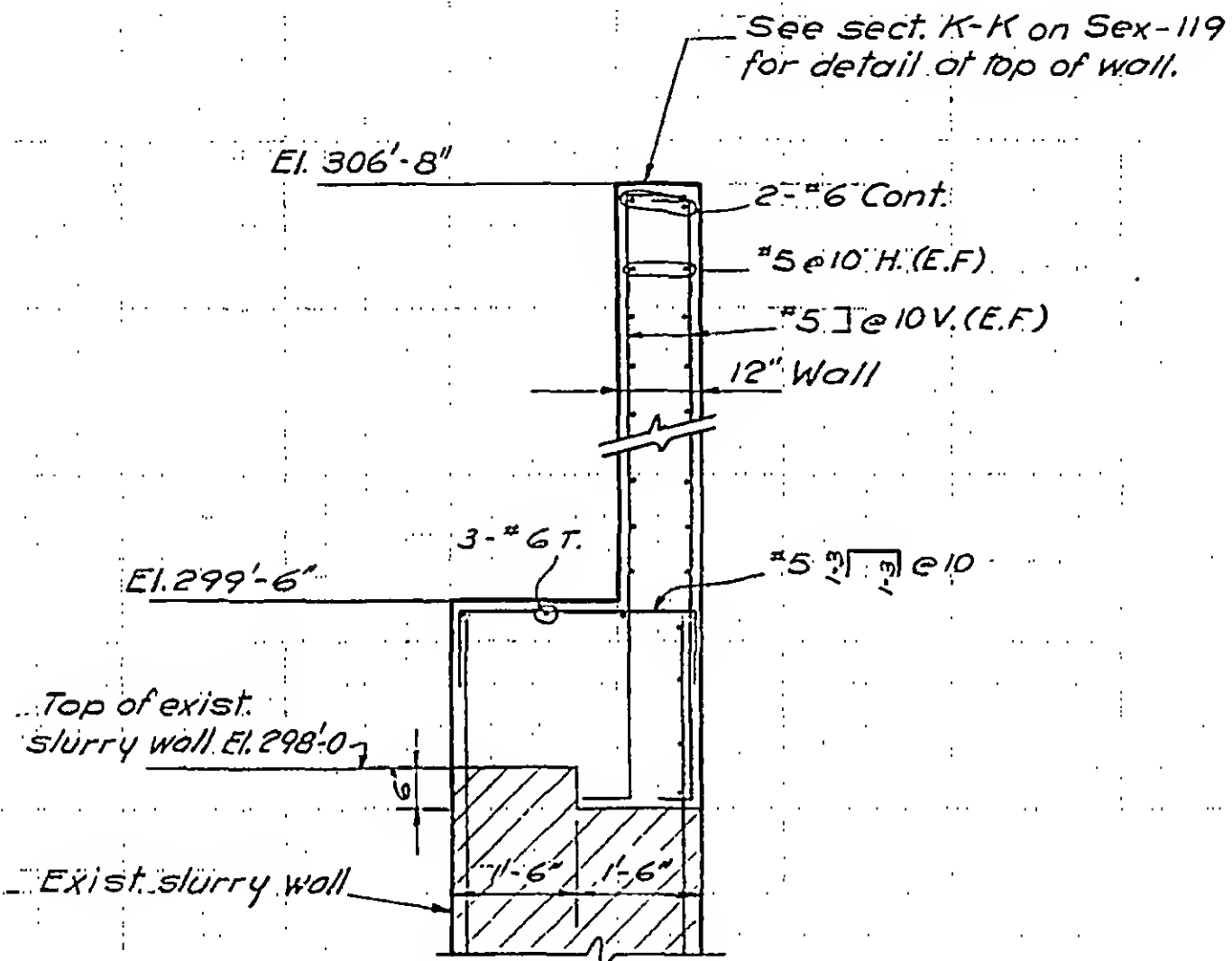
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TITLE NORTH PROJECTION - SECTIONS

DATE 3-16-70

REVISIONS



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V.H.A.REVIEWED
E.L.

8-JKB-22.19

2, 493-0000-1071

WTCI-1068-LE2A,1

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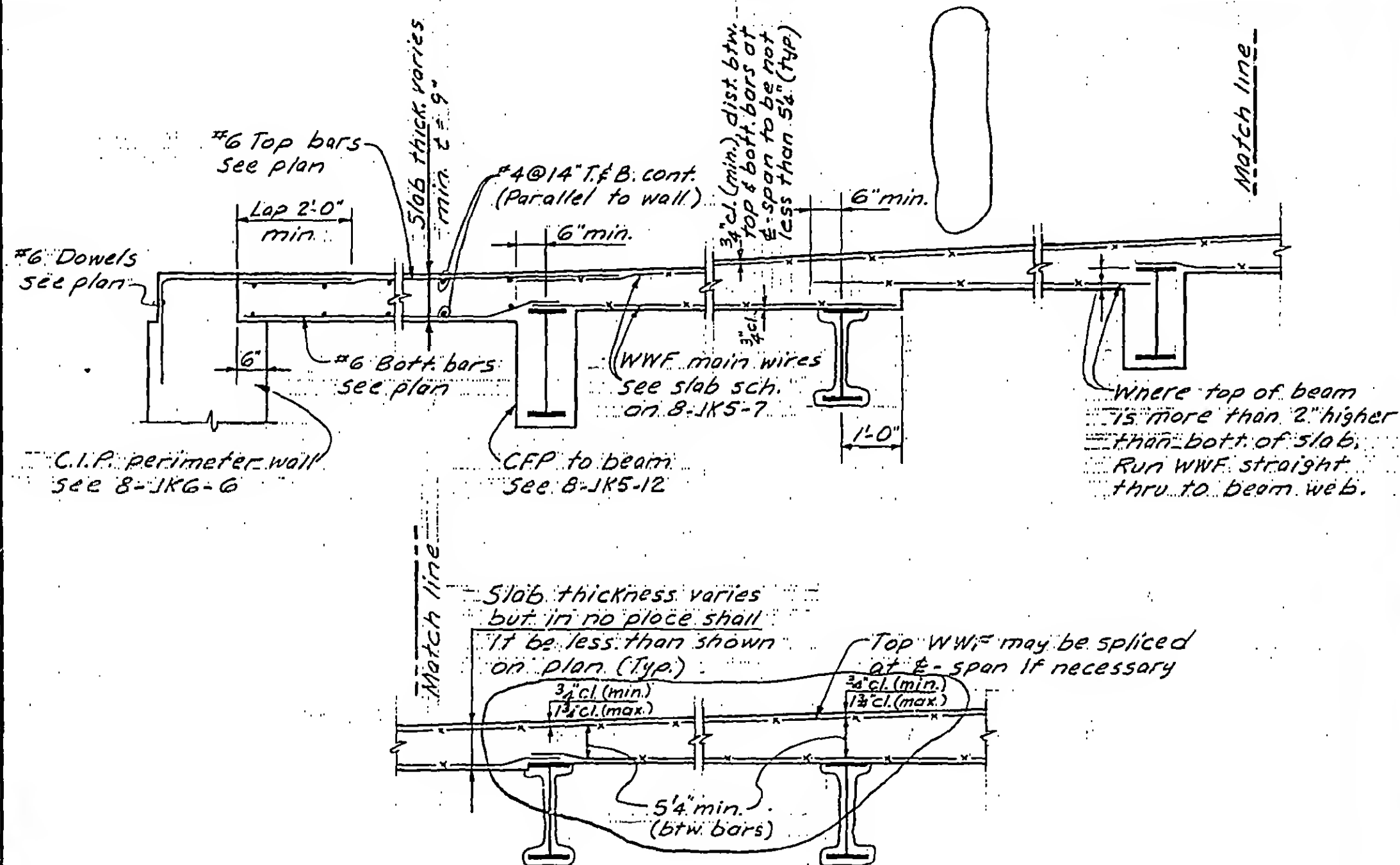
PROJECT THE WORLD TRADE CENTER

TITLE SECTIONS

DATE 1-17-69

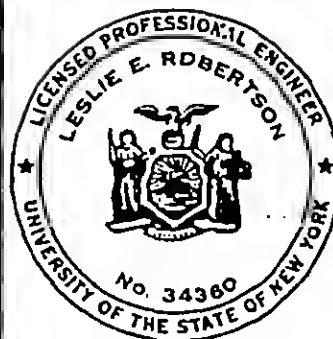
REVISIONS

3-11-69



Section D-D

(This Section also serves as typical detail
for areas having similar conditions)



DESIGNED

DRAWN

S.C.

REVIEWED

S.A. & C.

8-JK8-24.1

1066-2, 2

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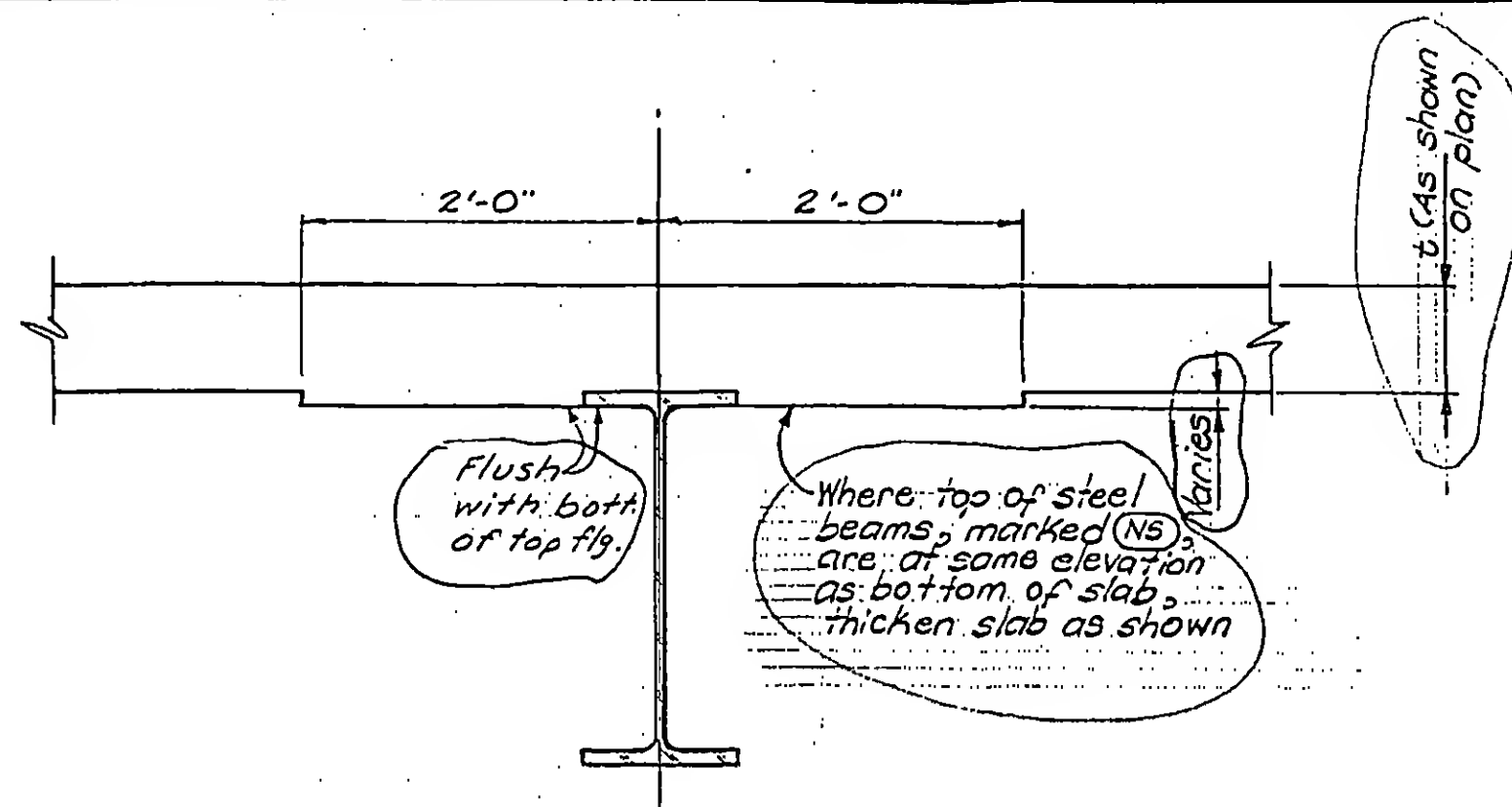
PROJECT THE WORLD TRADE CENTER

TITLE SECTION AT BEAM REQUIRING LATERAL SUPPORT

DATE 8-23-68

REVISIONS

5-5-69



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S.C.

REVIEWED

E.L.

8-JKB-25

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Structural & Civil Engineers

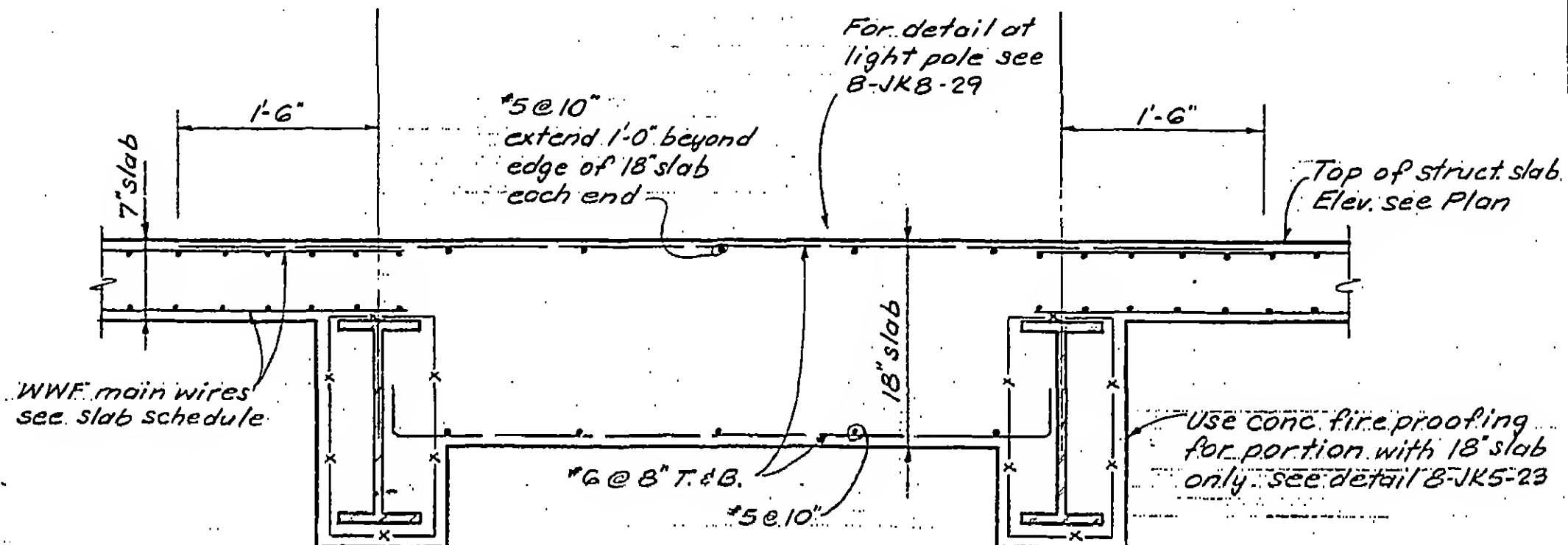
PROJECT THE WORLD TRADE CENTER

TITLE

SECTION

DATE 10-21-68

REVISIONS



Section C-C

Scale: 1" = 1'-0"



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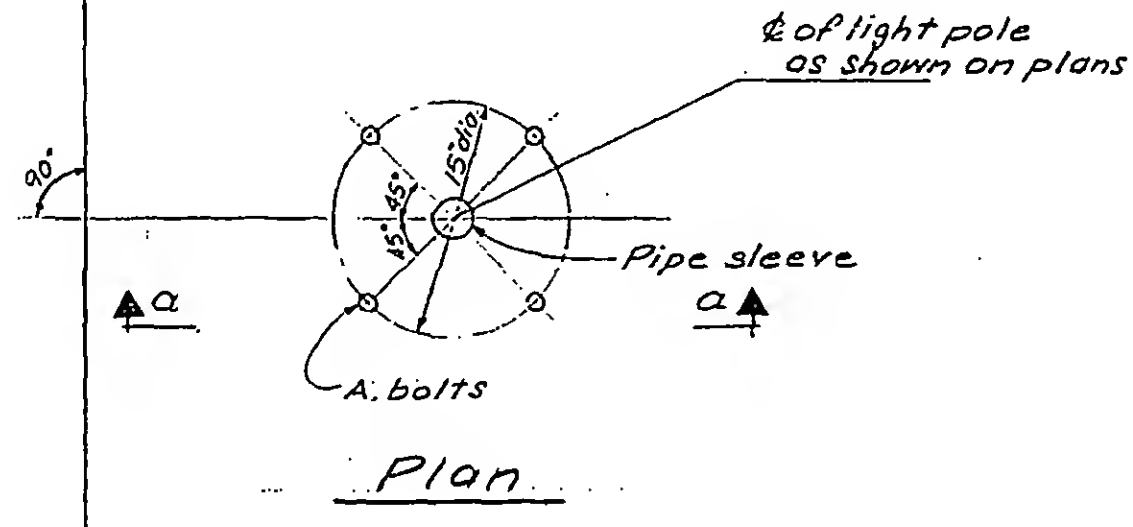
PROJECT THE WORLD TRADE CENTER

TITLE DETAIL AT LIGHT POLE

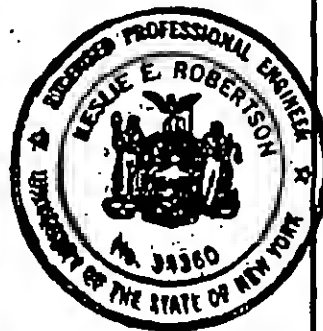
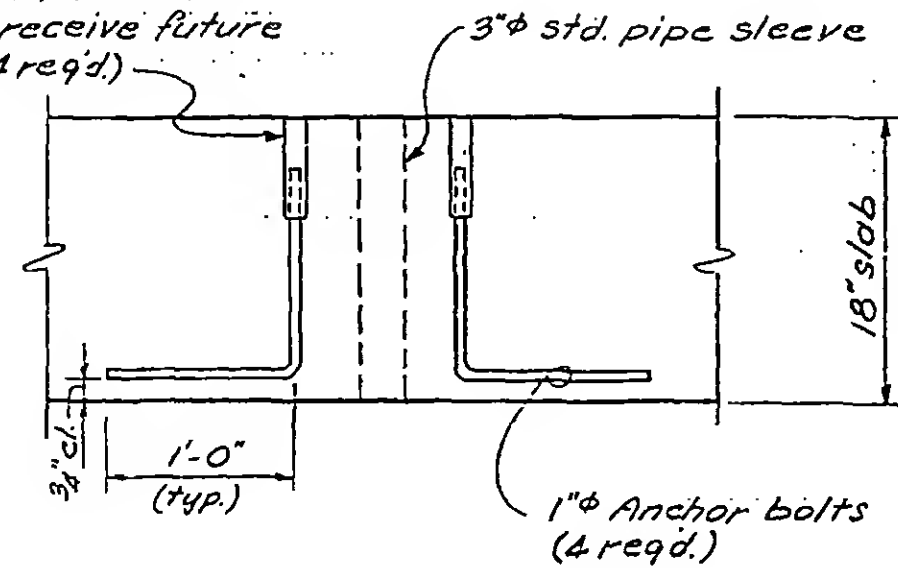
DATE 10-21-68

REVISIONS

Street curb line S



1" malleable iron bolt
coupling 3" long. Top
flush with struct.
slab to receive future
bolts: (4 req'd.)



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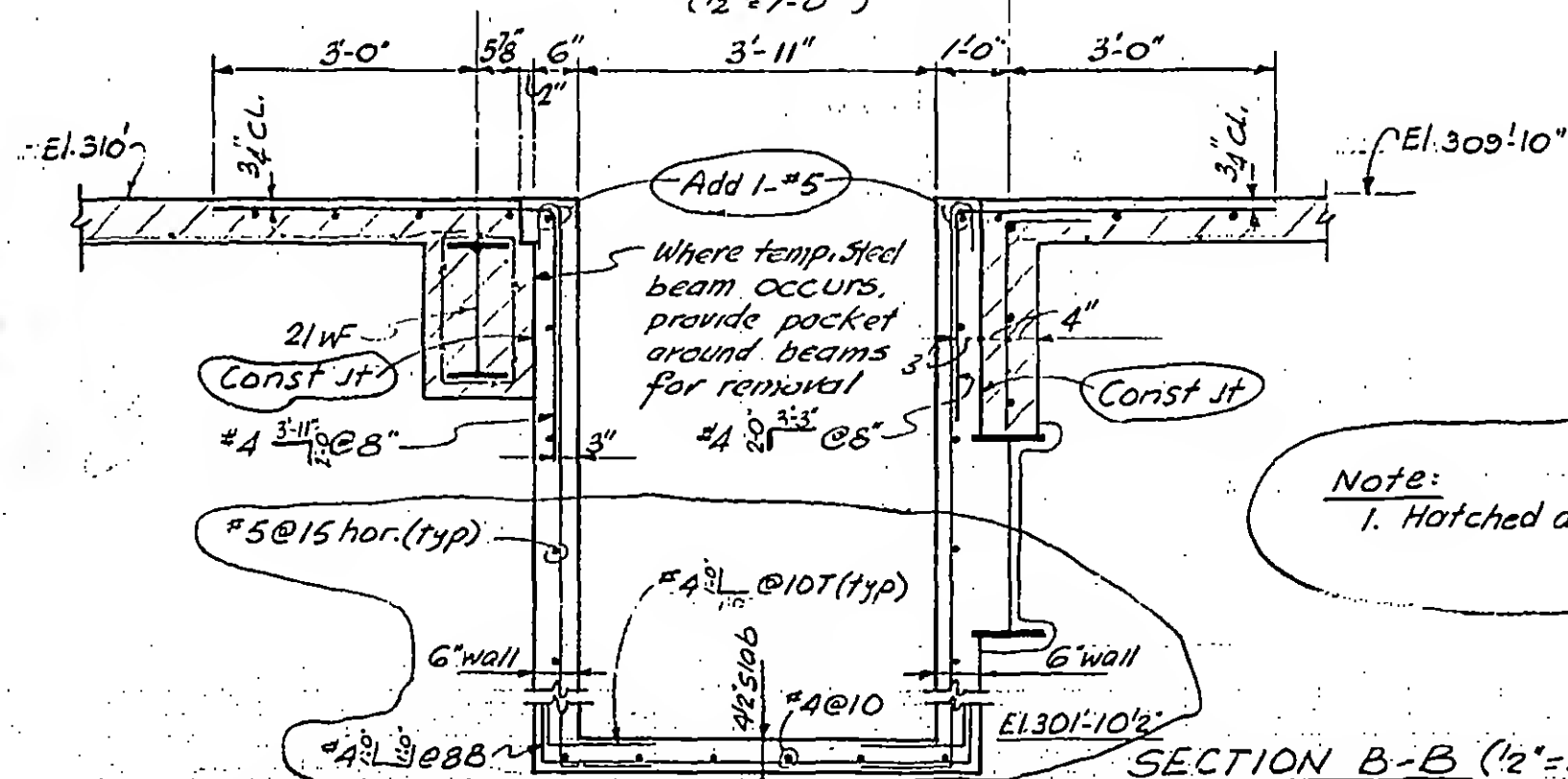
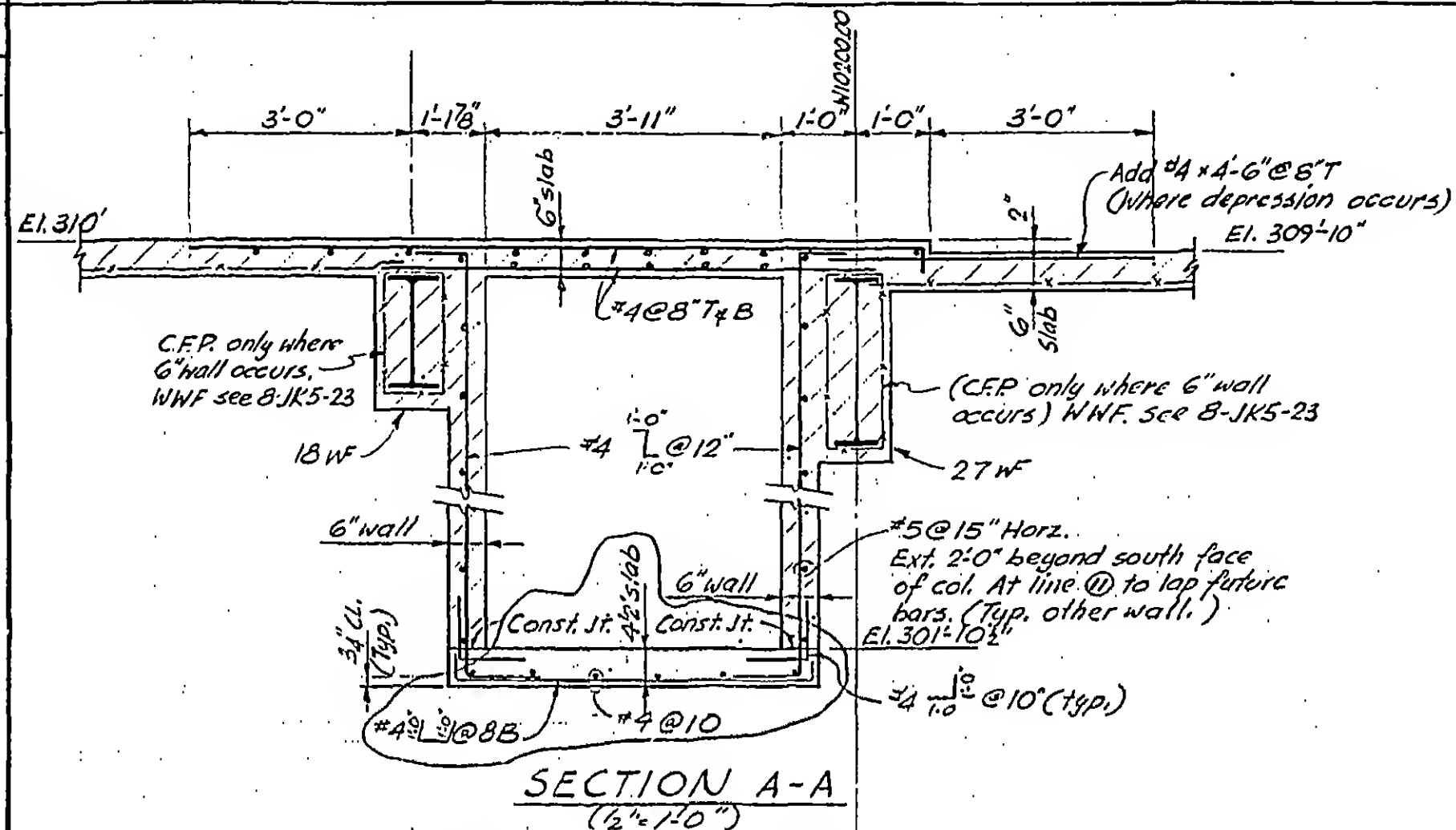
REVIEWED

8-JK8-29

REVISIONS

12-9-68

4-28-70



Note:

1. Hatched area — concrete already in place.

SECTION B-B (12"=1'-0")

8-JK8-51



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S.C.

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E.L.

Structural & Civil Engineers

| TITLE | SECTIONS |
|--------------------------------------|----------|
| 1. <u>General Information</u> | |
| 2. <u>Geological Setting</u> | |
| 3. <u>Geological Map</u> | |
| 4. <u>Geological Cross Sections</u> | |
| 5. <u>Geological Data</u> | |
| 6. <u>Geological Interpretation</u> | |
| 7. <u>Geological Conclusions</u> | |
| 8. <u>Geological Recommendations</u> | |
| 9. <u>Geological References</u> | |
| 10. <u>Geological Appendix</u> | |

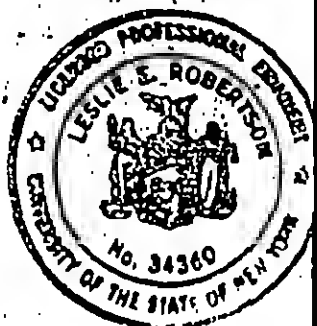
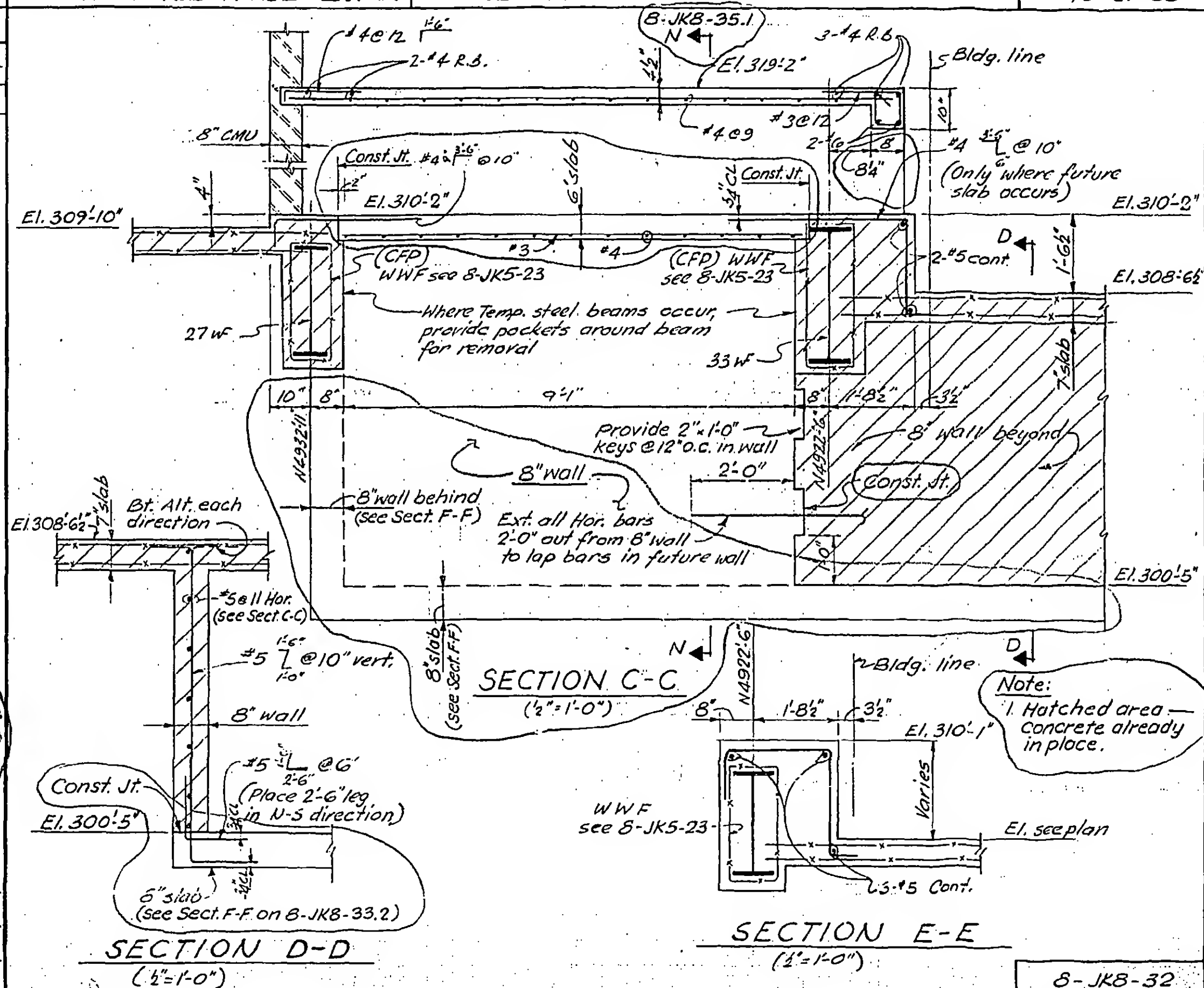
DATE 10-21-68

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12-9-68

2-27-69

4-28-70



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8-JK8-32

Structural & Civil Engineers

| TITLE | SECTIONS |
|---------------------------|-------------------------------|
| 1. General Information | 1.1. Name of the Project |
| 2. Objectives and Scope | 2.1. Purpose of the Study |
| 3. Methodology | 3.1. Research Design |
| 4. Results and Discussion | 4.1. Data Collection |
| 5. Conclusion | 5.1. Summary of Findings |
| 6. References | 6.1. Literature Cited |
| 7. Appendixes | 7.1. Additional Data |
| 8. Glossary | 8.1. Definitions of Terms |
| 9. Bibliography | 9.1. Sources of Information |
| 10. Index | 10.1. Subject Index |
| 11. Acknowledgments | 11.1. Credits |
| 12. Notes | 12.1. Footnotes |
| 13. References | 13.1. Bibliography |
| 14. Appendixes | 14.1. Additional Data |
| 15. Glossary | 15.1. Definitions of Terms |
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| 19. Notes | 19.1. Footnotes |
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DATE 10-21-68

12-9-68.

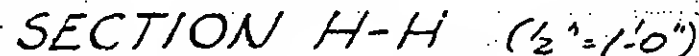
12-18-68

2-14-69.

4-28-70



$(12'' = 1' - 0'')$



8-JK8-33.1



TRAINED

DRAWN
SC

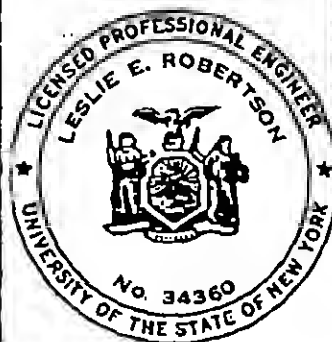
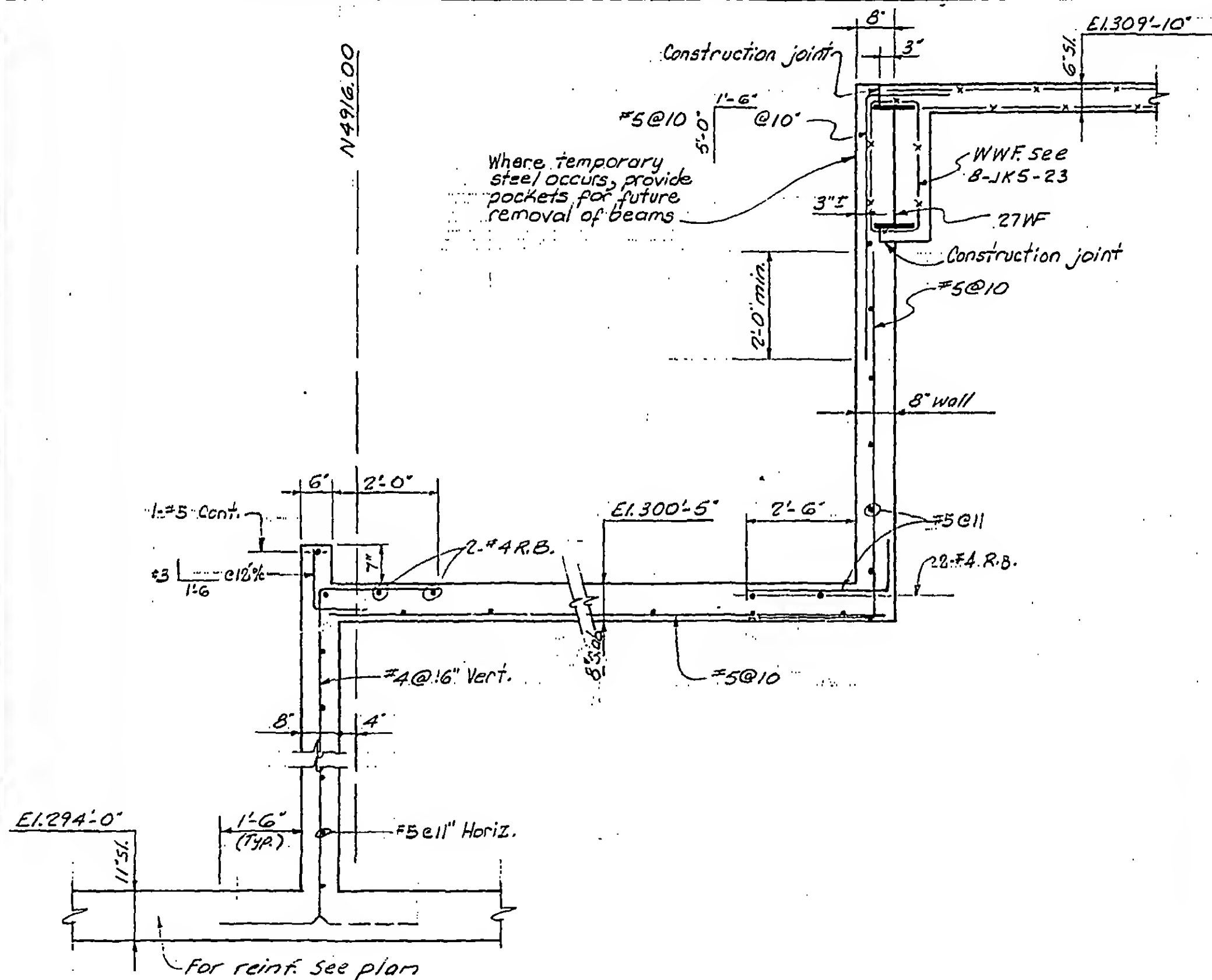
REVIEWS

Structural & Civil Engineers

| | |
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| TITLE | SECTIONS |
|-------|----------|

DATE 12-18-68

REVISIONS



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DATE

S.C.

REVIEWED

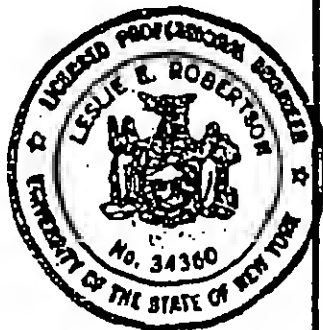
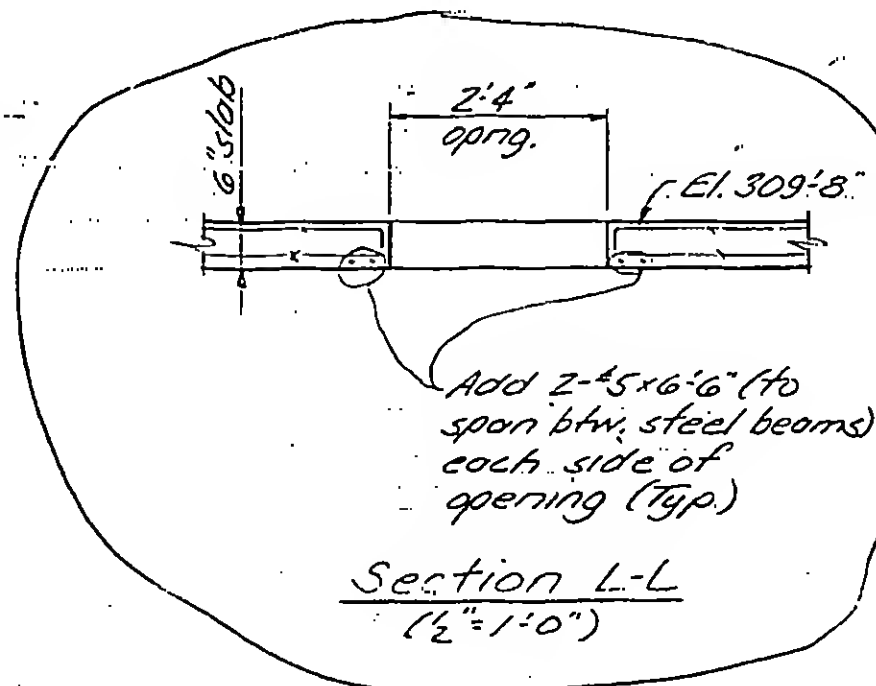
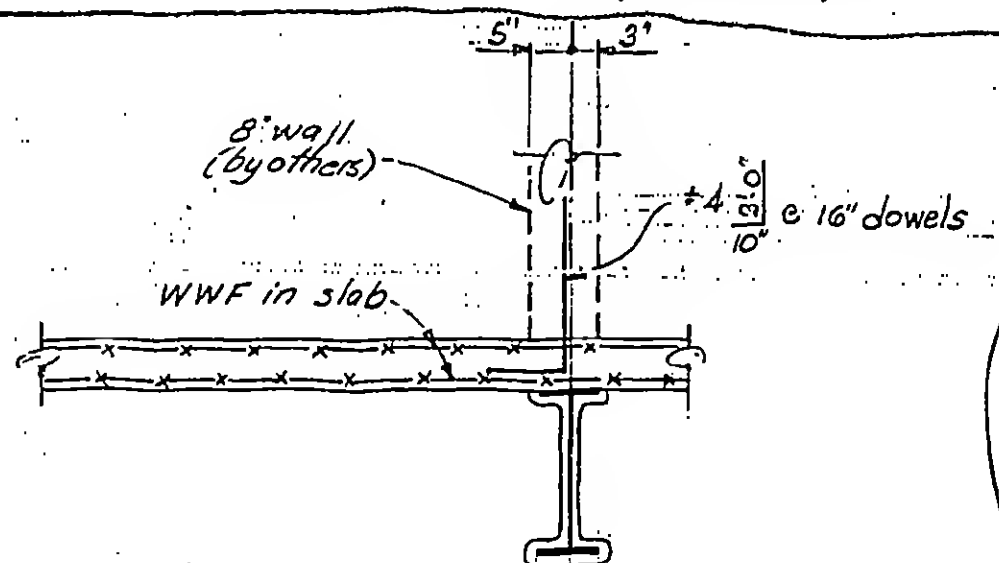
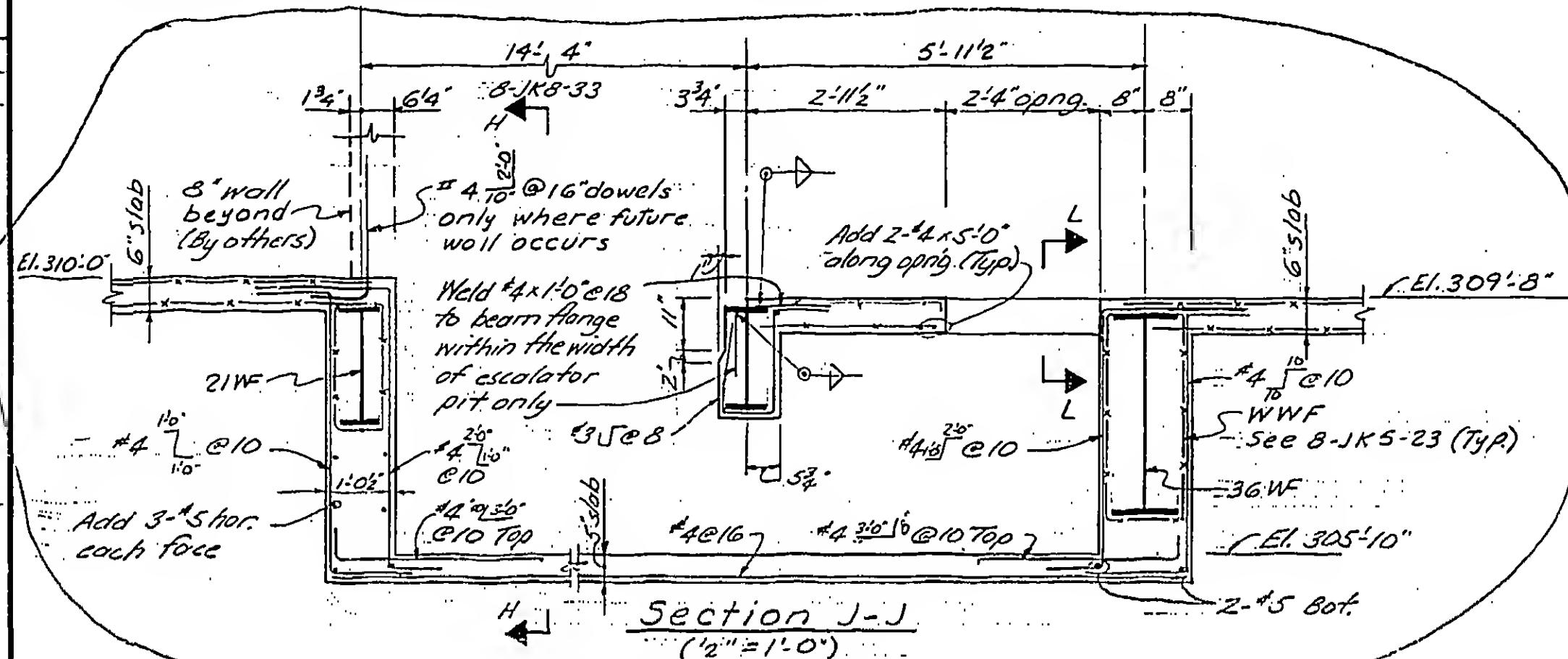
Section F-F

8-JK8-33.2

REVISIONS

12-9-68

2-14-69



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DRAWN
S.C.

REVIEWED
J.M. & E.L.

8-JK8-34

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

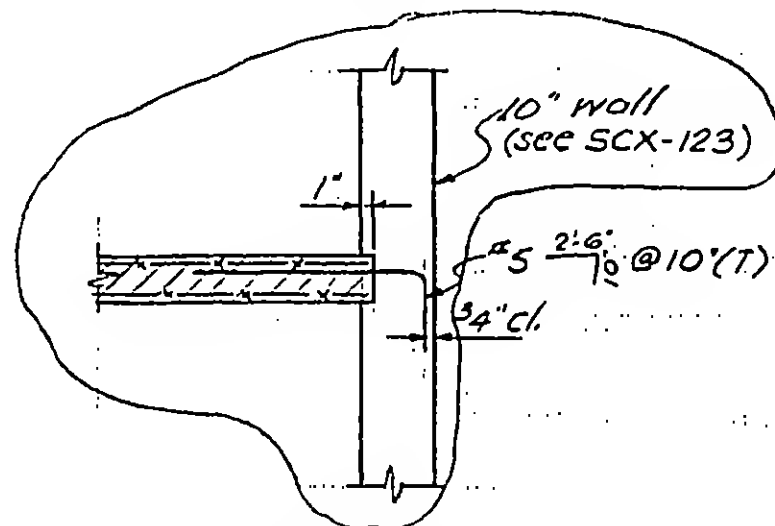
PROJECT THE WORLD TRADE CENTER

TITLE SECTIONS

DATE 10-21-68

REVISIONS

4-28-70

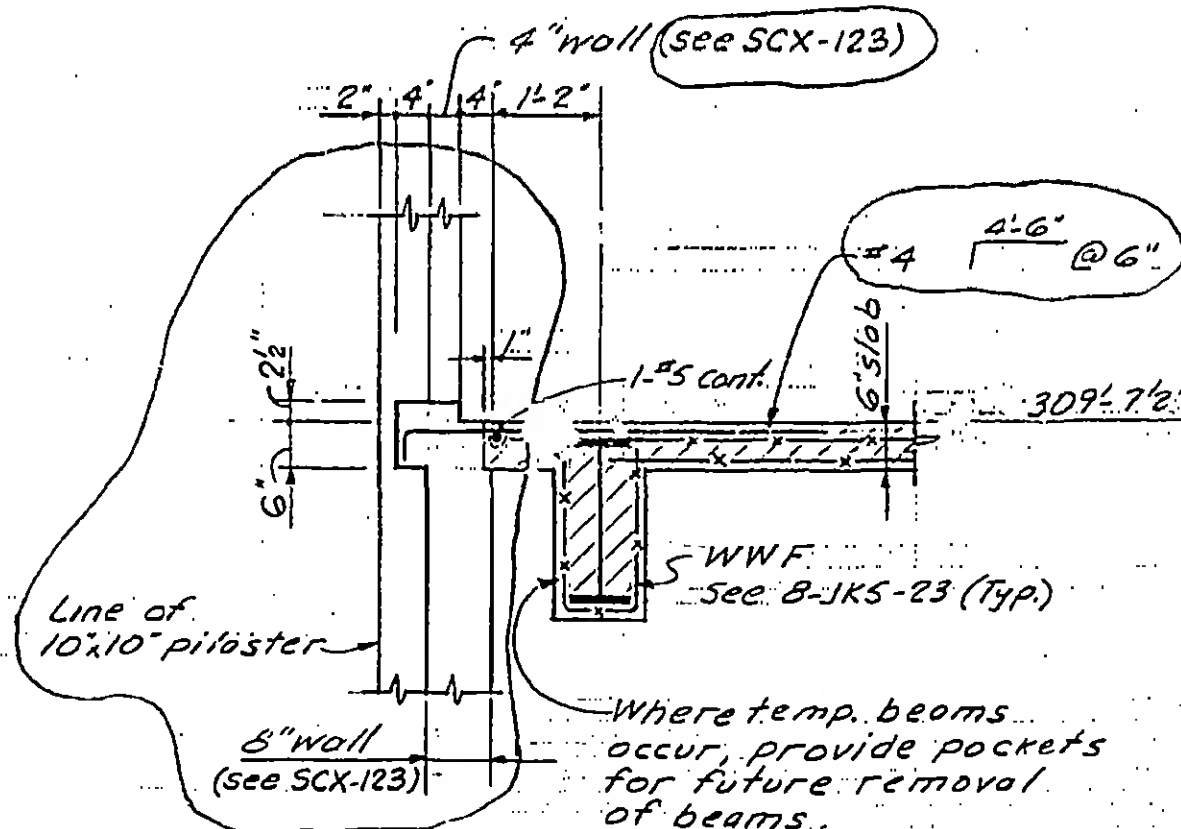
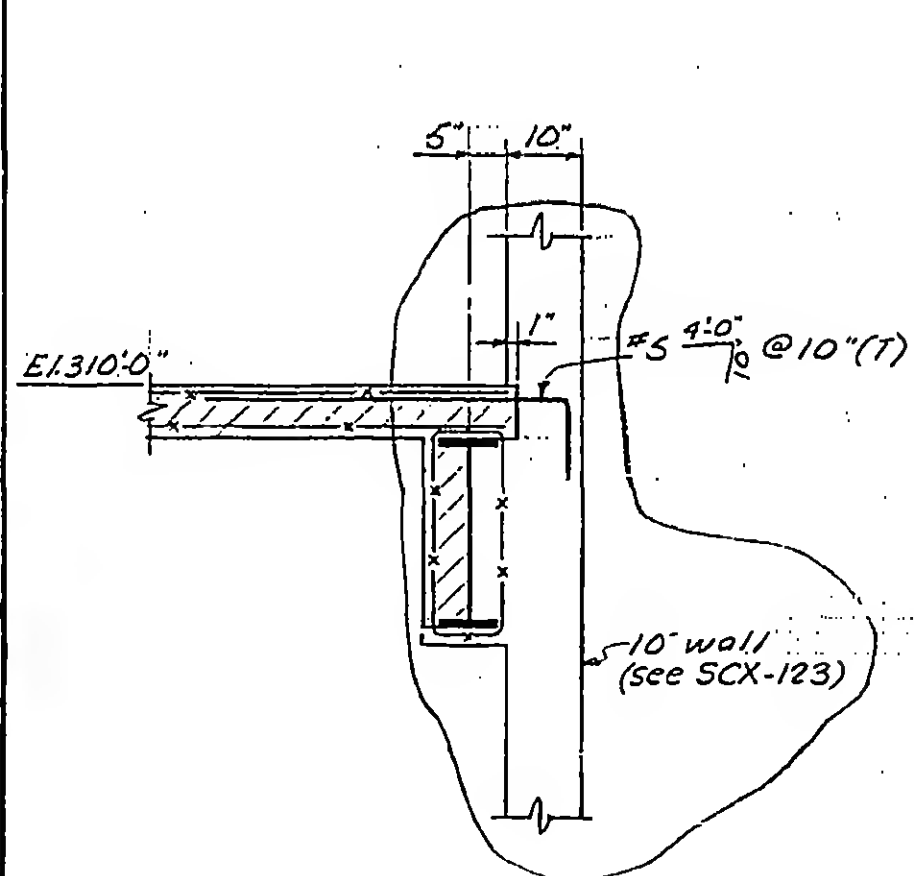


Note:

1. Hatched area — concrete already in place

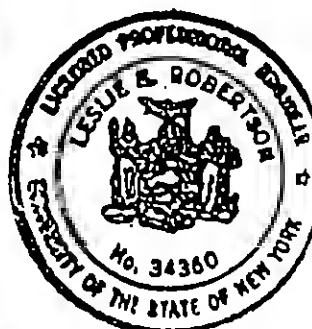
Section M-M

(1/2" = 1'-0")



Section P-P

(1/2" = 1'-0")



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E.L.

8-JK8-35

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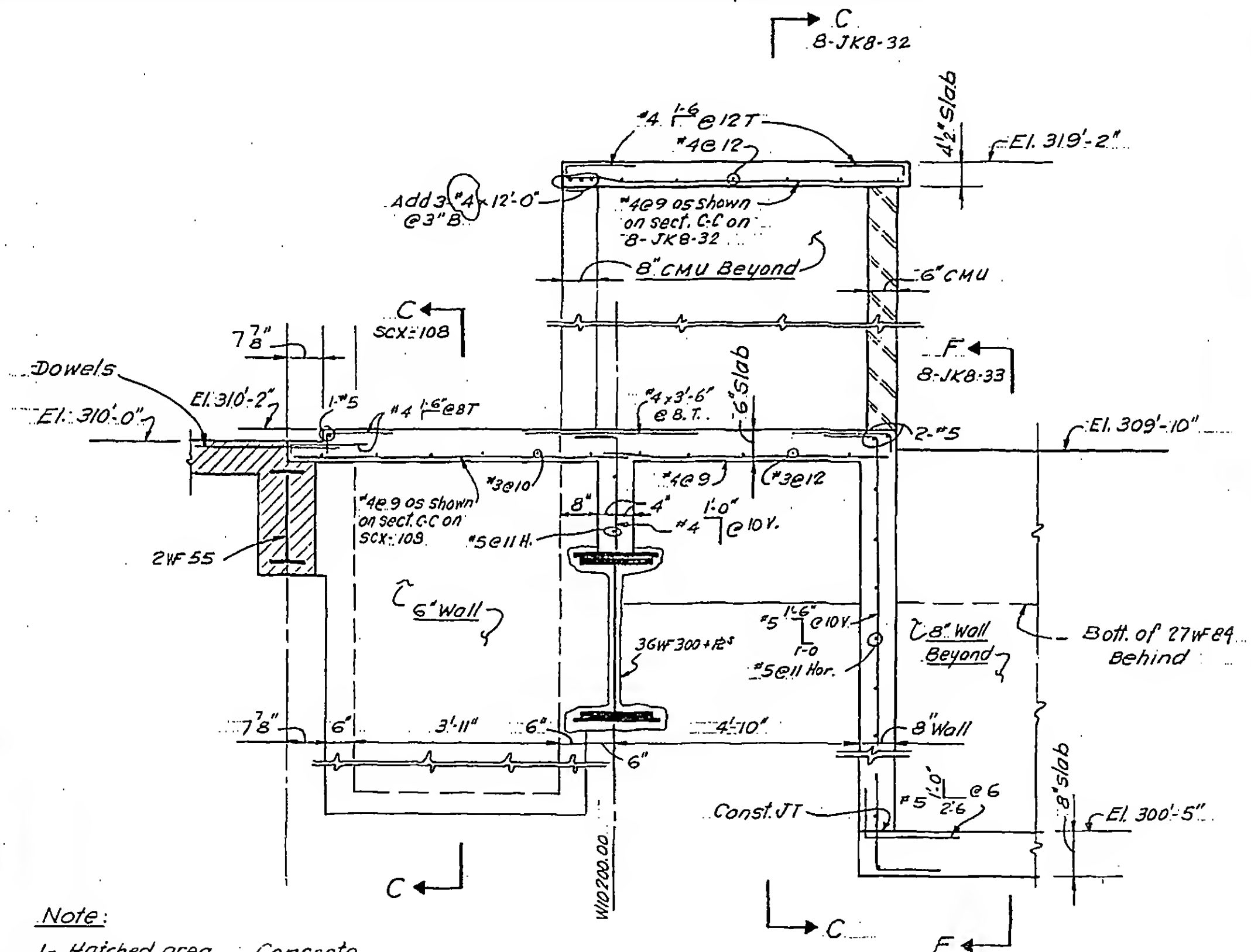
PROJECT THE WORLD TRADE CENTER

TITLE SECTIONS

DATE 4-28-70

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5-15-70



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12-9-68

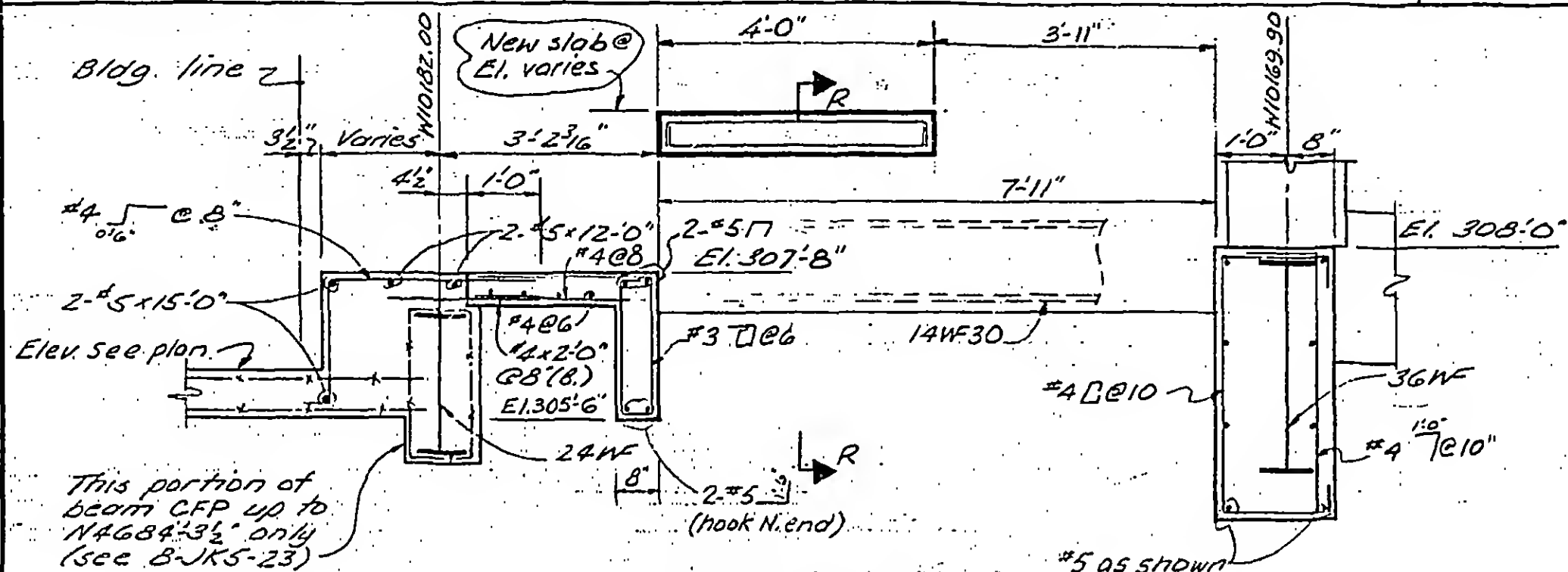
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1-17-69

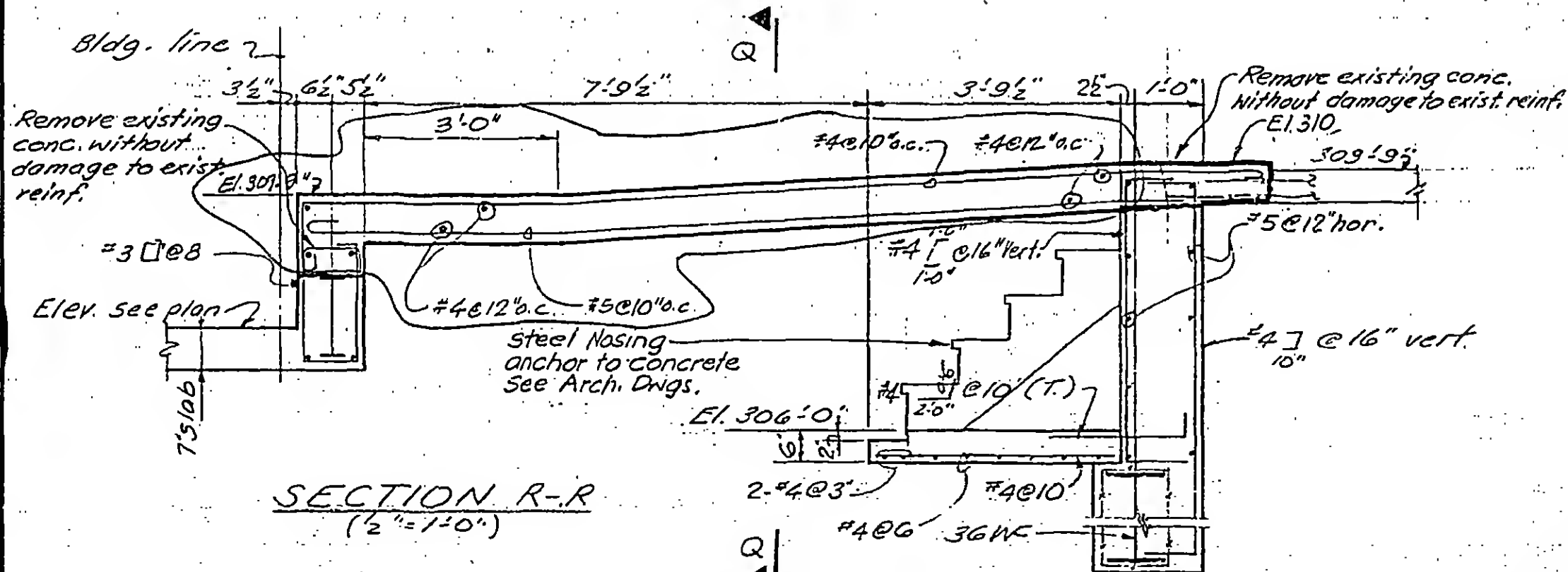
4-28-70

6-15-73

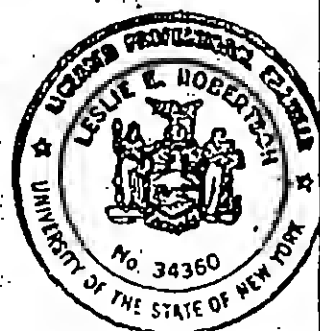
9-25-73



SECTION Q-Q
(2" = 1'-0")



SECTION R-R
(2" = 1'-0")



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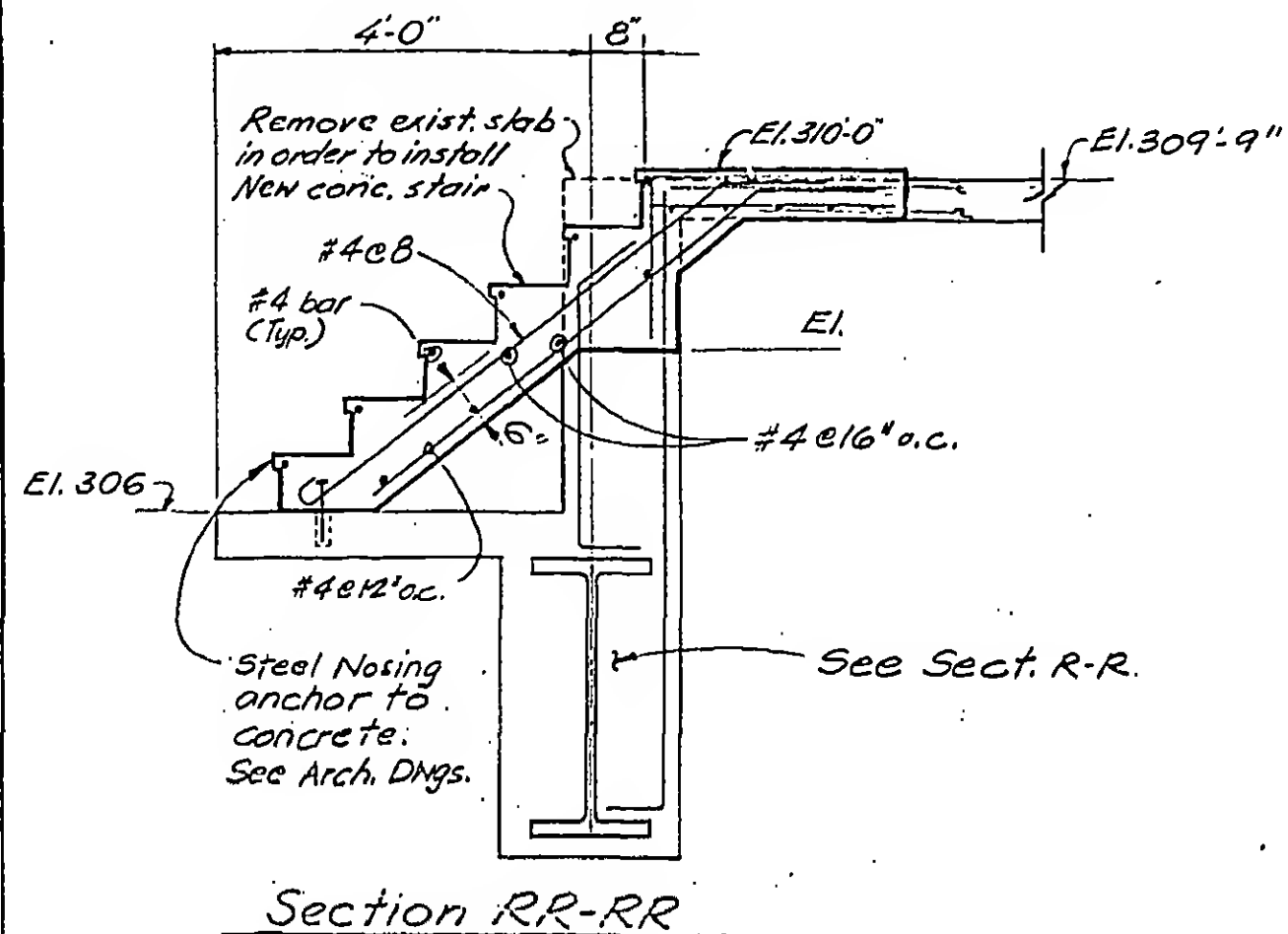
52

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J.M. & E.L.

8-VK8-36.1

SCALE

REVISIONS



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PROJECT

THE WORLD TRADE CENTER

TITLE

SECTIONS AT STAIR K-1A EL. 310

DATE

6-15-73

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Structural & Civil Engineers

DWG.

NO. 8-JK8-36.2

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE SECTIONS

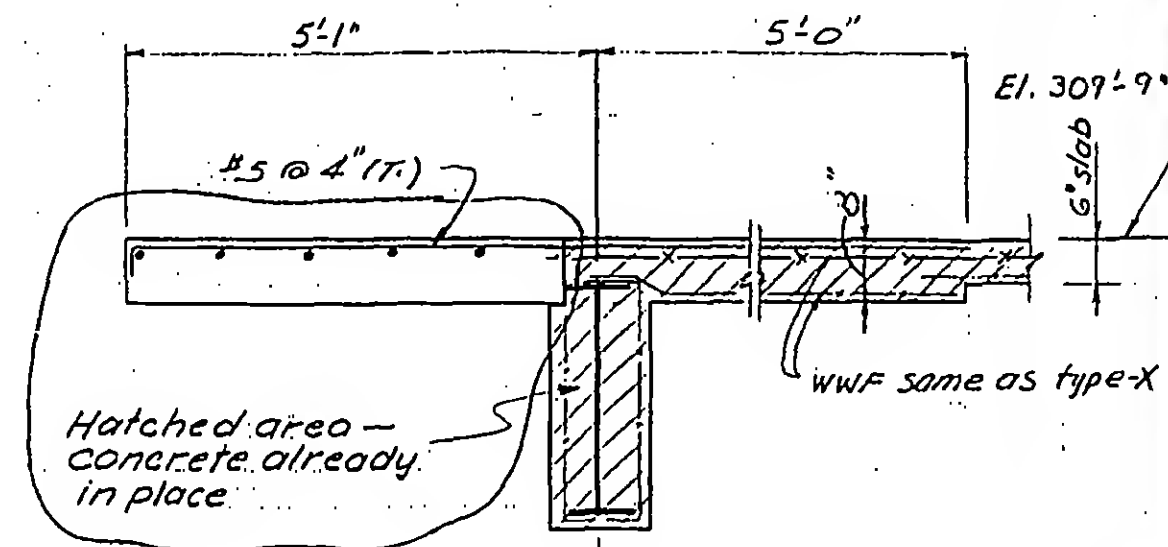
DATE 10-21-68

REVISIONS

12-9-68

12-18-68

4-28-70



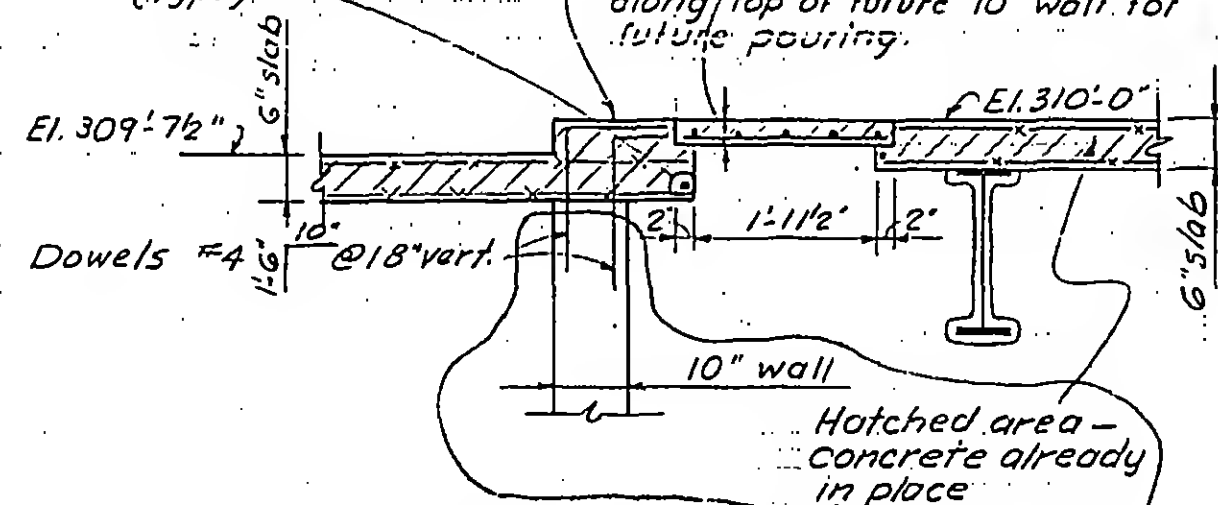
Section T-T

(1/2\" - 1'-0\")

1-#5B. ea. side of
opng. Ext. 2'-0\" beyond
ea. side of opng.
(Typ.)

3' Removable slab
cover with
WWF 6x6 - 6/6
(Typ.)

Provide 8"x12\" slot holes @ 2'-0\" c.c.
along top of future 10\" wall for
future pouring.



Section U-U

(1/2\" - 1'-0\")



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8-JKB-37.1

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

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PROJECT

THE WORLD TRADE CENTER

TITLE

SECTIONS

DATE

12-18-68

REVISIONS

2-19-69

3-15-73

Burn off existing dowels

Where temp. steel
beams occur, provide
pocket for future
removal of beams.

#4 5'-6"
@12"
0'-10"

31

E1.309'-9"

12'-51"

#5 bars
See note
on plan

WWF
See 8-JK5-23

#5@12"

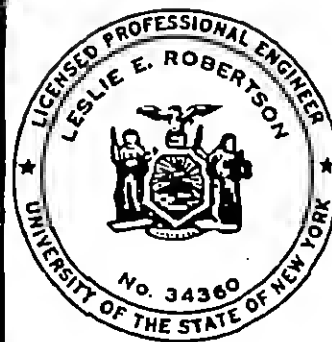
36WF

Burn off existing
dowels

E1.294'-0"

Section S-S

8-JK8-37.2



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PROJECT

THE WORLD TRADE CENTER

TITLE

SECTIONS

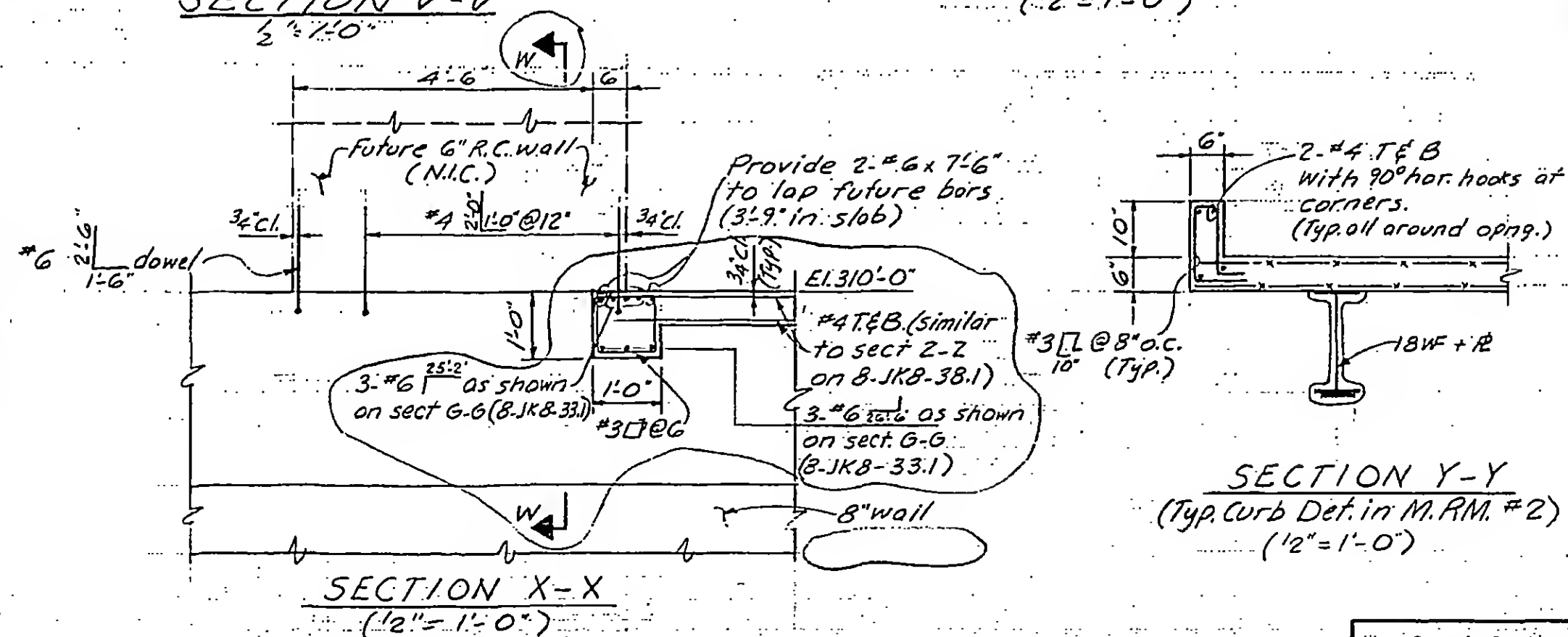
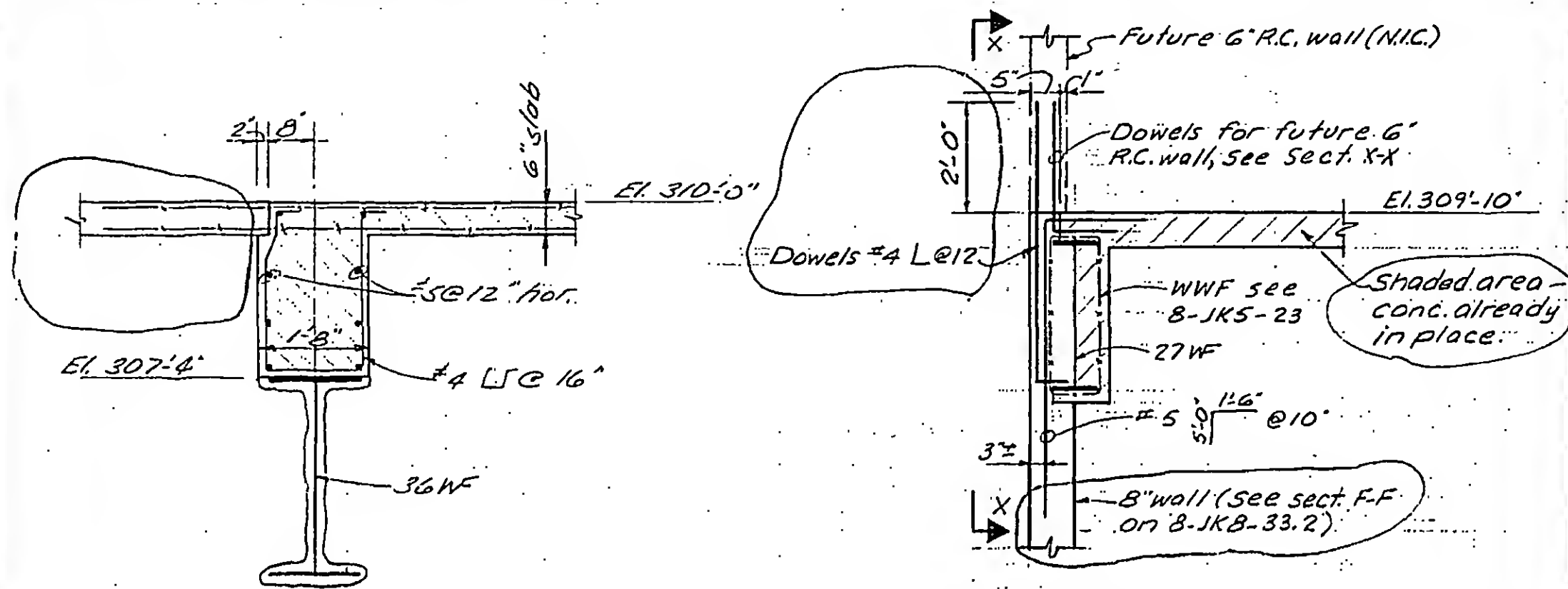
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10-21-68

REVISIONS

12-9-68

4-28-70

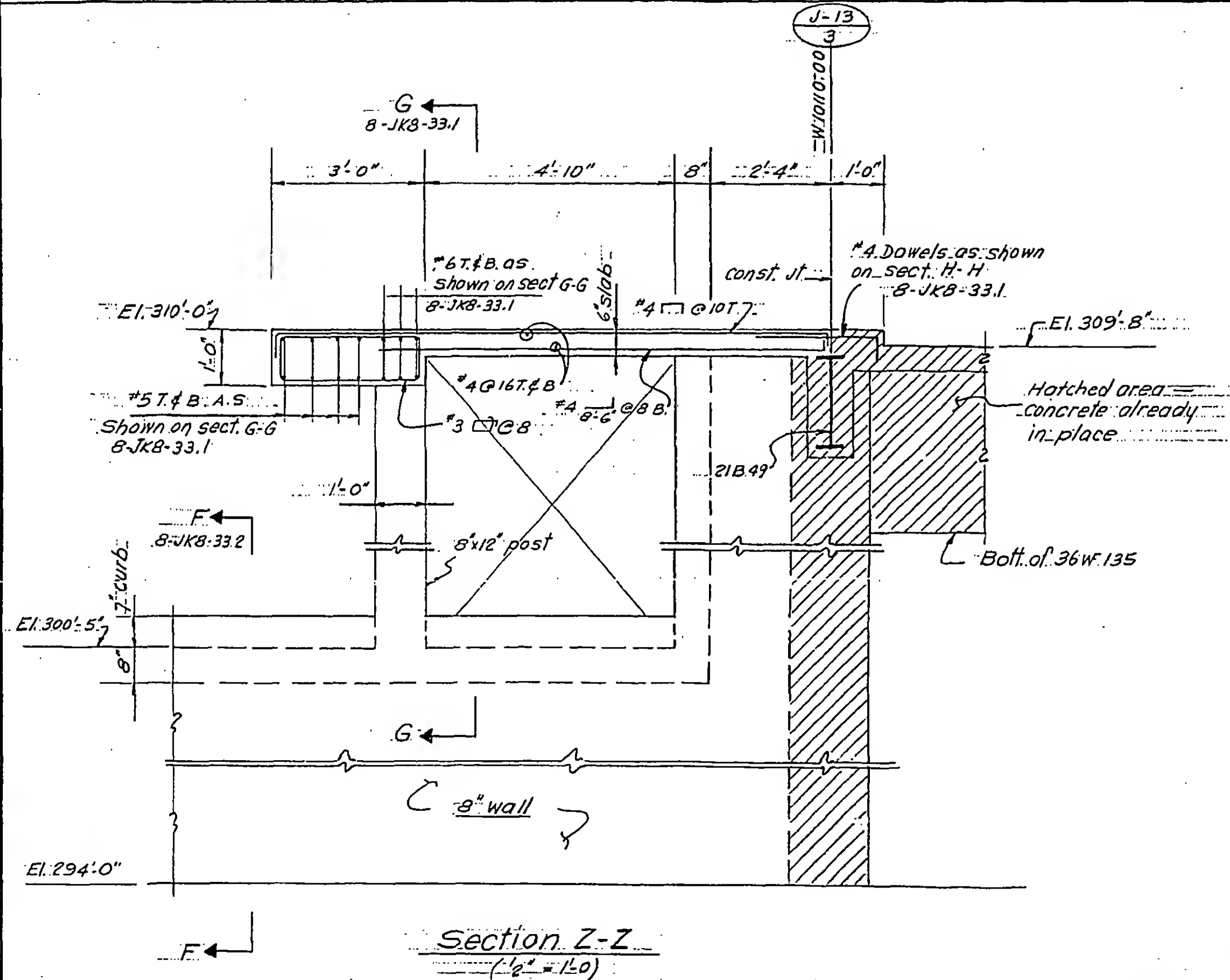


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DRAWN
S.C.REVIEWED
E.L.

8-JKB-38

REVISIONS



-8 JK8-38.1

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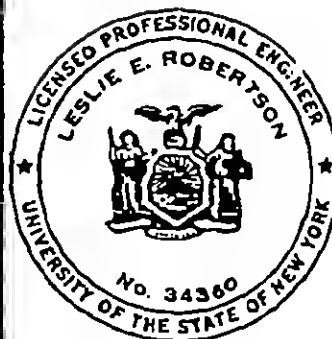
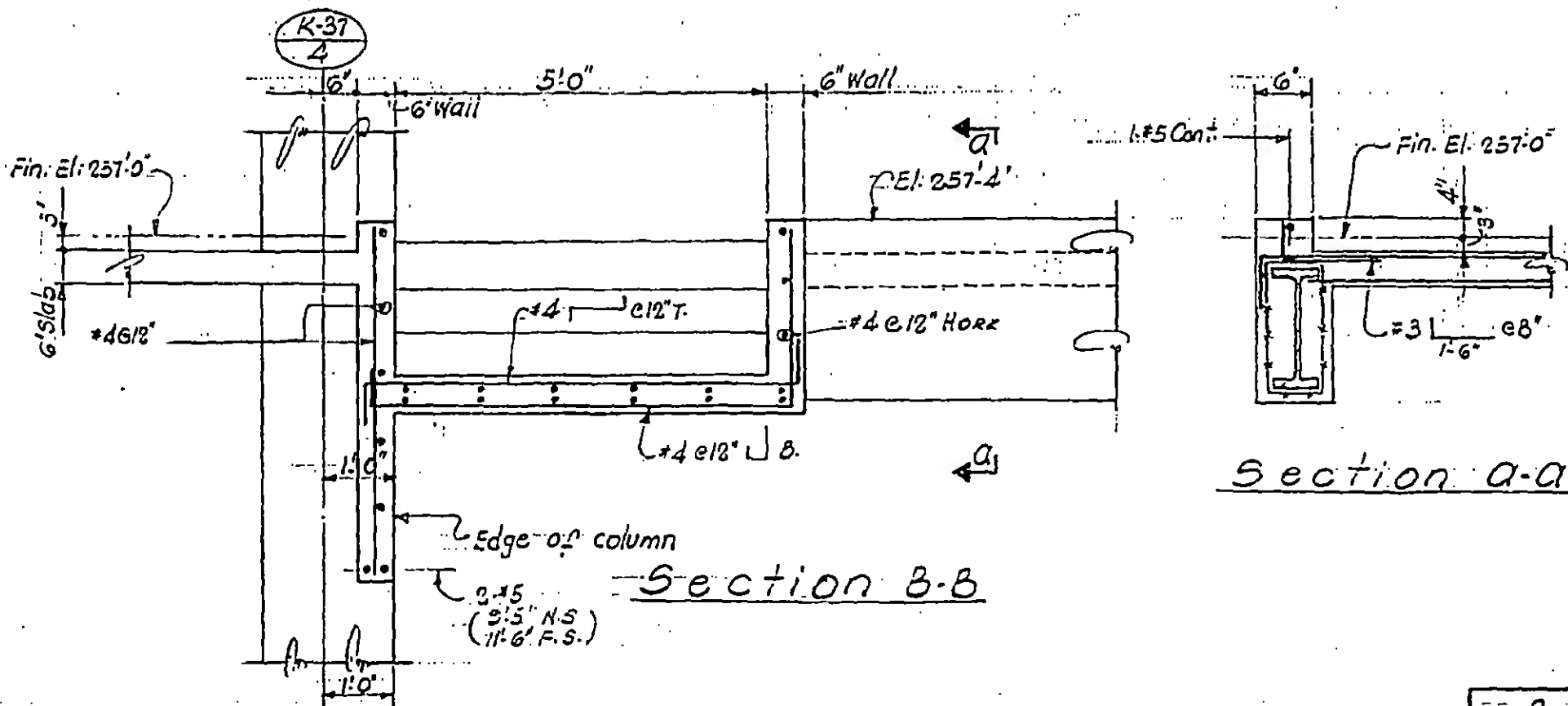
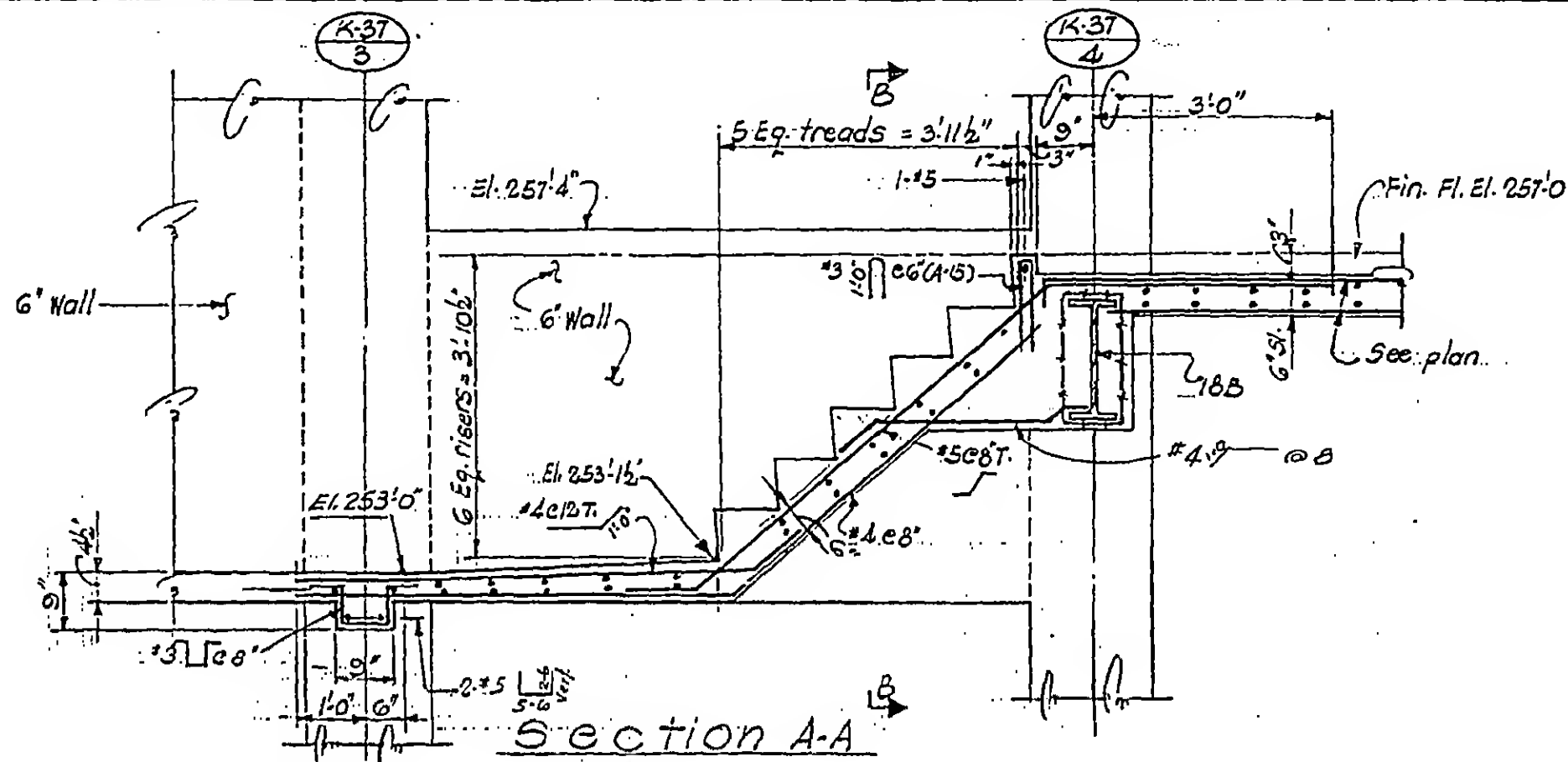
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE SECTIONS AT EL. 257'-0"

DATE 5-27-69

REVISIONS



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DRAWN

S.T.M.

REVIEWED

8-JK8-39.1

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

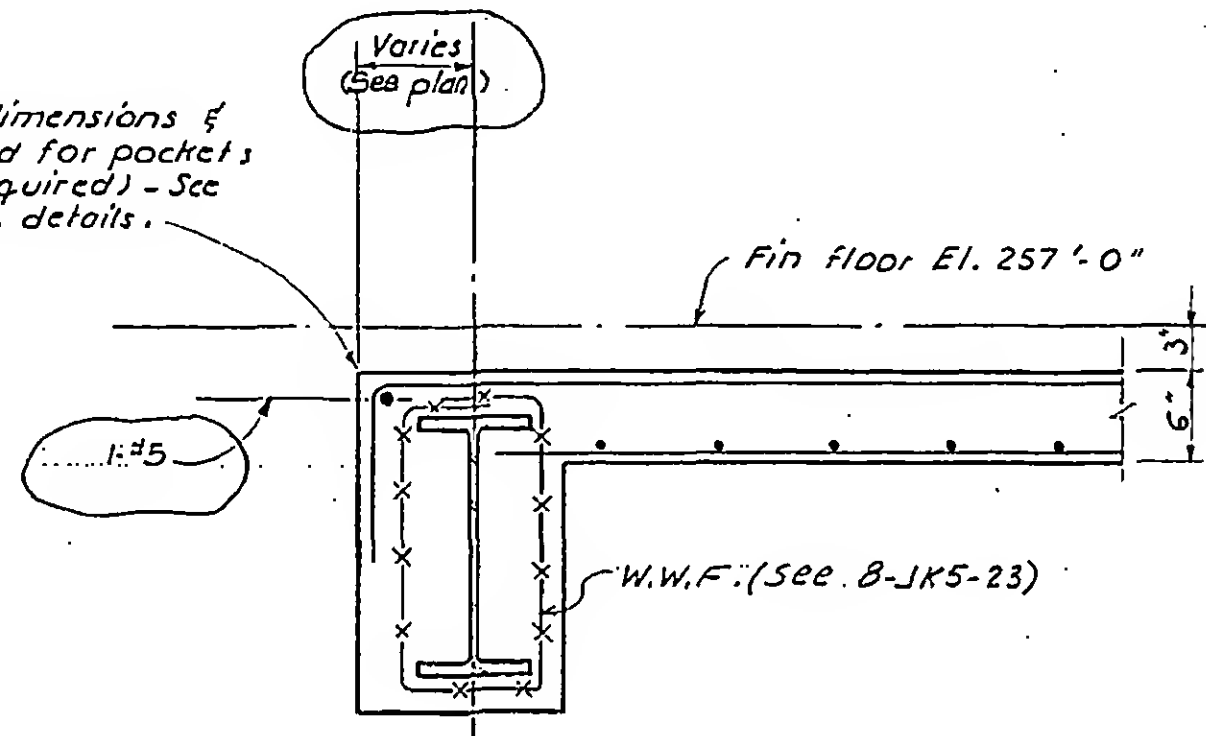
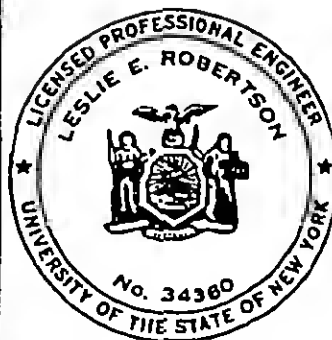
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTERTITLE SECTIONS AT EL. 257'-0"DATE 12-18-68

REVISIONS

5-27-69

For dimensions &
extend for pockets
(if required) - See
Arch. details.

Section C-C

DESIGNED

DRAWN

S.C.

REVIEWED

J.M. & E.L.

8-JK8 39.2

Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

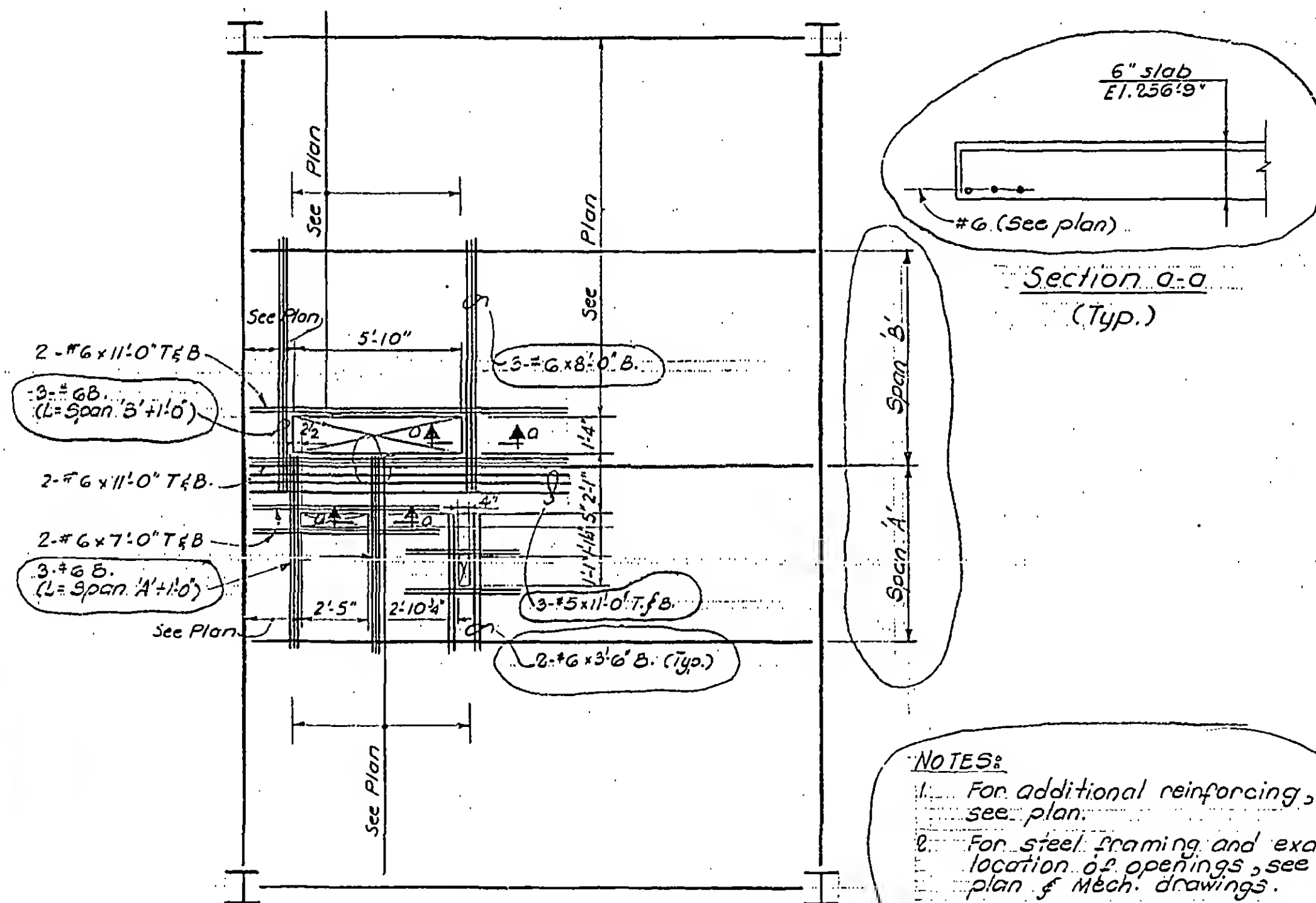
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SECTIONS AT EL. 257'-0"

DATE 12-18-68

REVISIONS

5-27-69



Detail D (Typ.)



DESIGNED

DRAWN
S.C.

REVIEWED.
M. & E. L.

NOTES:

1. For additional reinforcing, see plan.
2. For steel framing and exact location of openings, see plan & Mech. drawings.

8-JK8-39.3

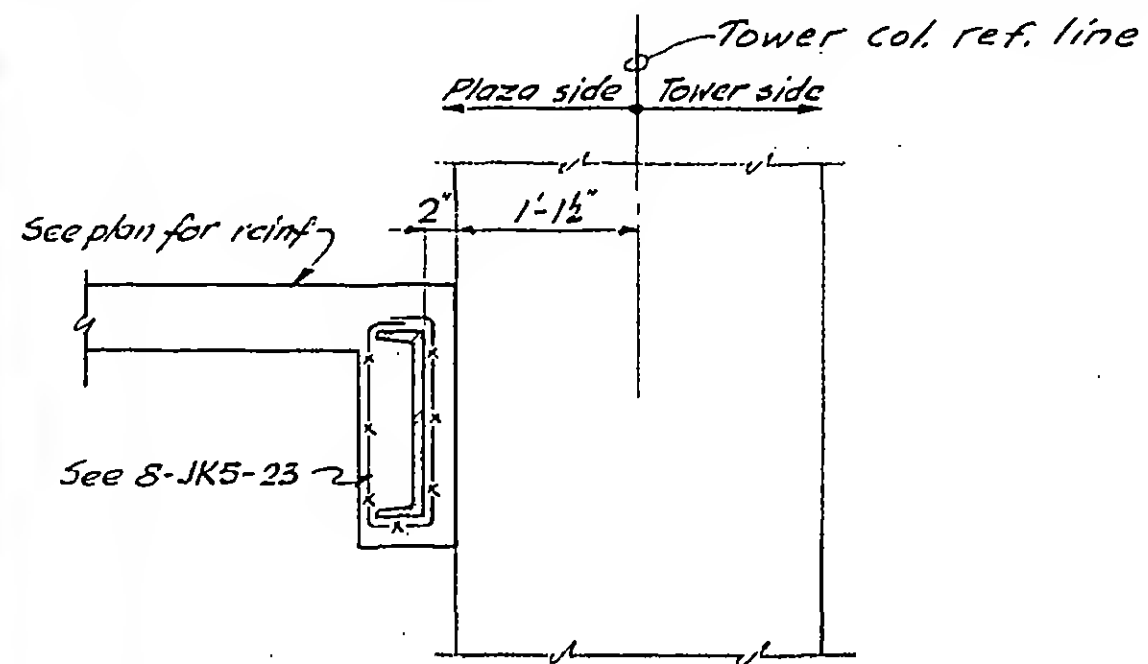
Structural & Civil Engineers

PROJECT *THE WORLD TRADE CENTER*

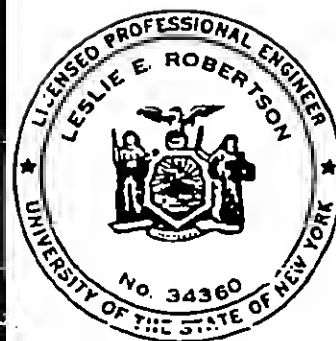
TITLE *SECTIONS EL. 257'-0"*

DATE 12-18-68

REVISIONS



Section E-E



DESIGNED

DRAWN
S.C.

REVIEWED
J.M. & E.L.

8-JK8-39.4

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

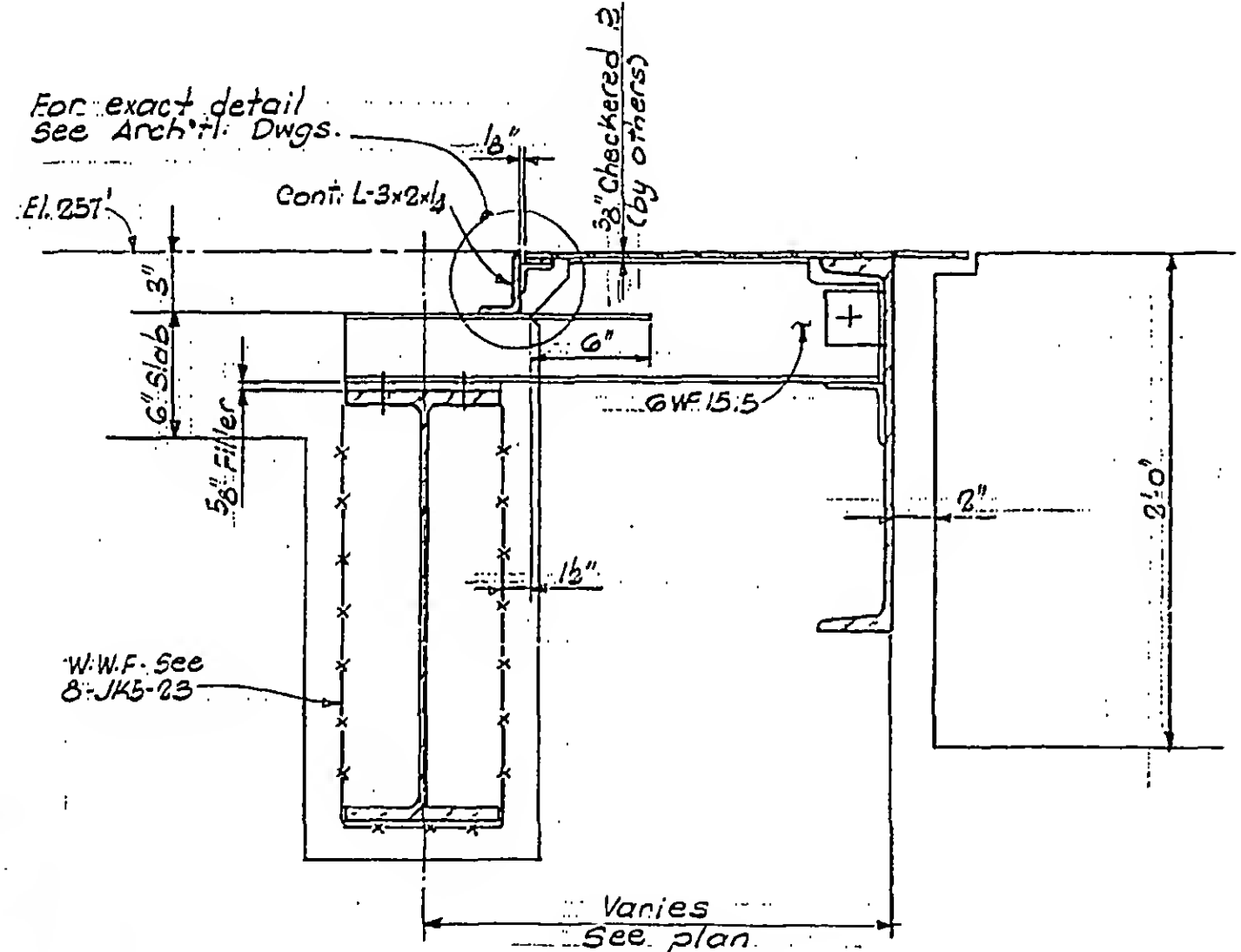
PROJECT THE WORLD TRADE CENTER

TITLE

SECTION AT EL. 257'

DATE 12-18-68

REVISIONS



Section F-F



DESIGNED

DRAWN

S.C.

REVIEWED

J.M. & E.L.

8-JK8-39.5

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

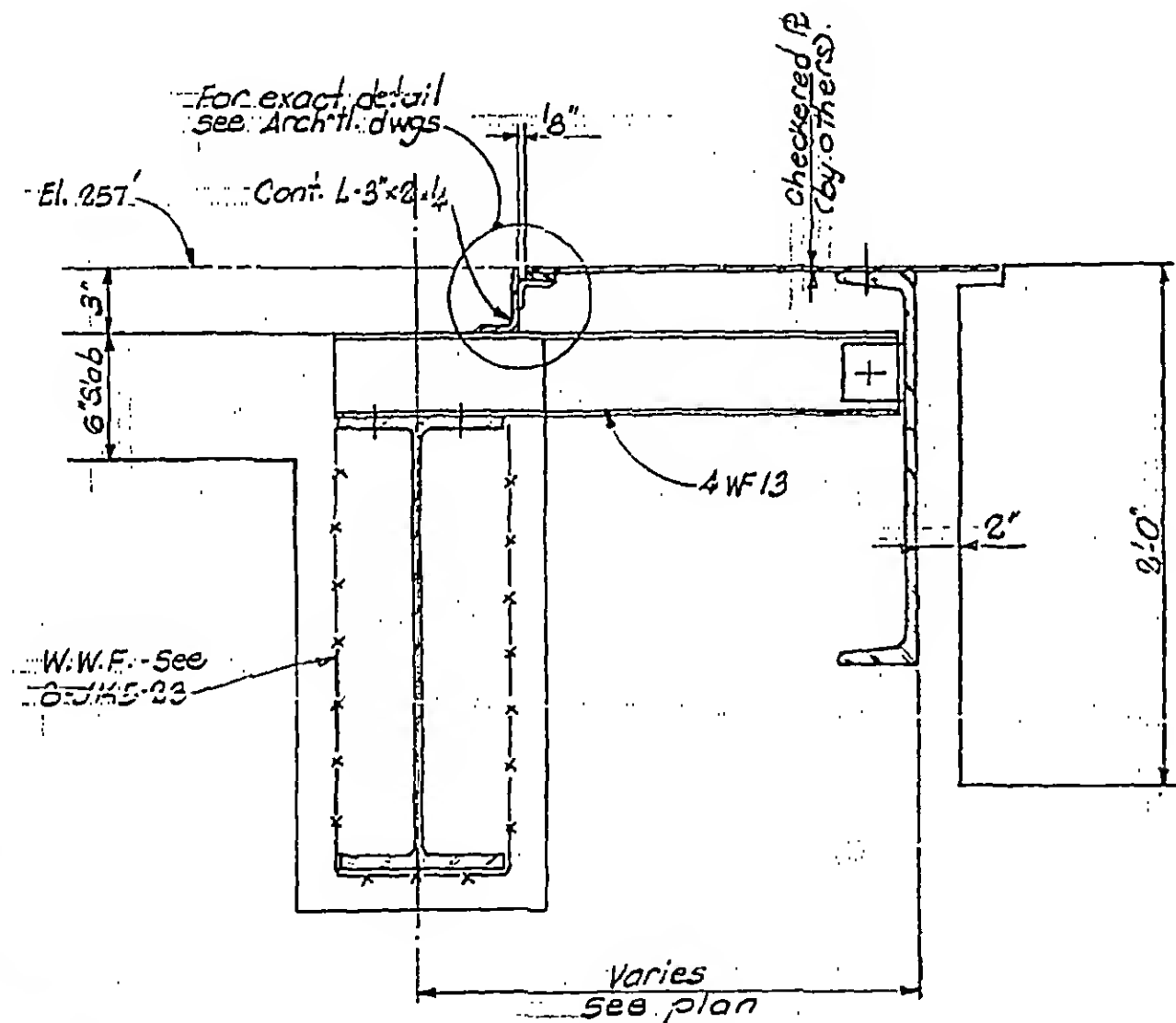
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

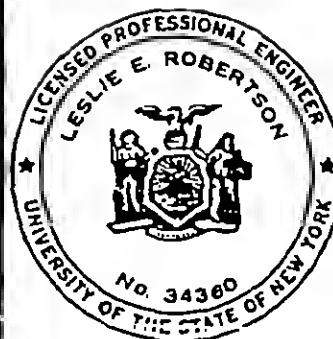
TITLE SECTION AT EL. 257'

DATE 12-18-68

REVISIONS



Section G-G



DESIGNED

DRAWN

S.C.

REVIEWED

J.M. & E.L.

8-JK8-39.6

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

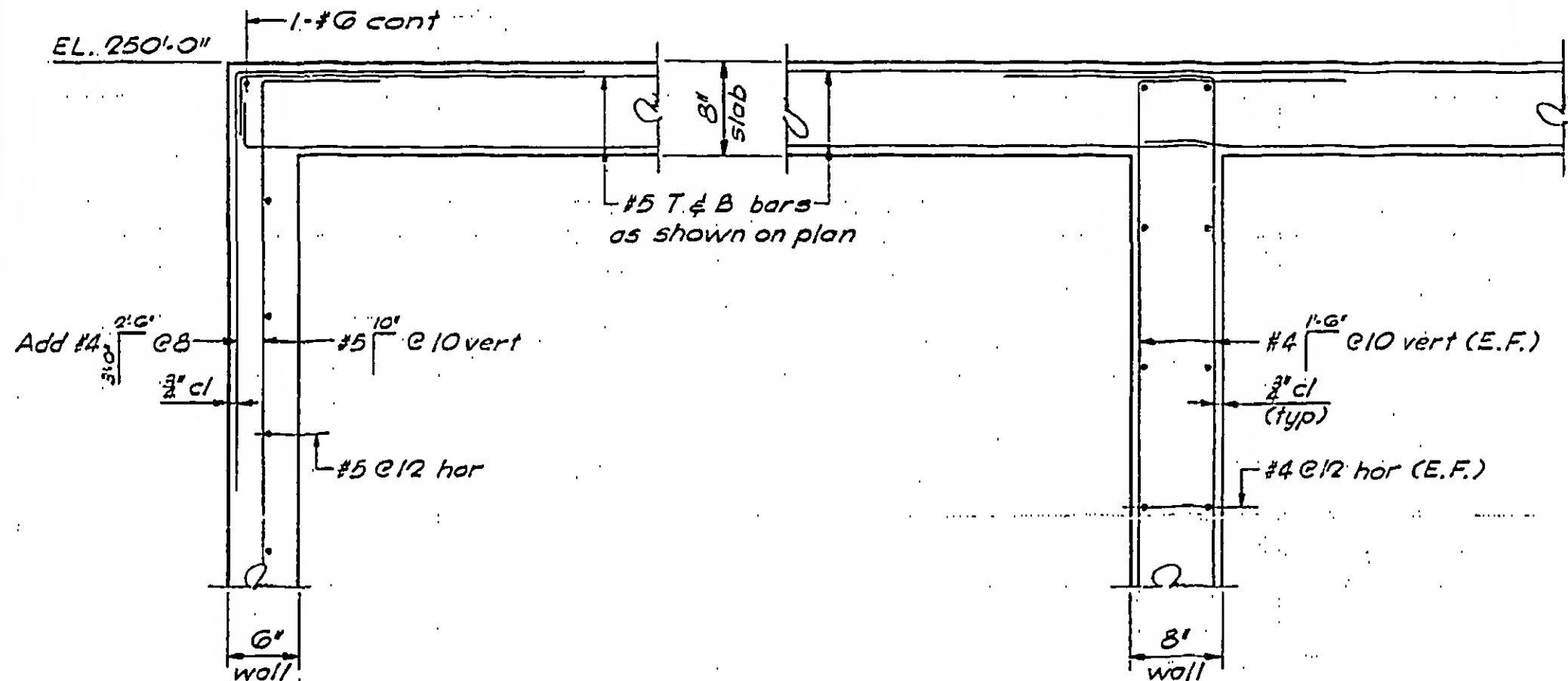
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE SECTIONS AT EL. 250'-0"

DATE 11-13-69

REVISIONS



SECTION H-H
(1" = 1'-0")

SECTION J-J
(1" = 1'-0")



DESIGNED

DRAWN

G.K.

REVIEWED

E.L.

8-JK8-39.7

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

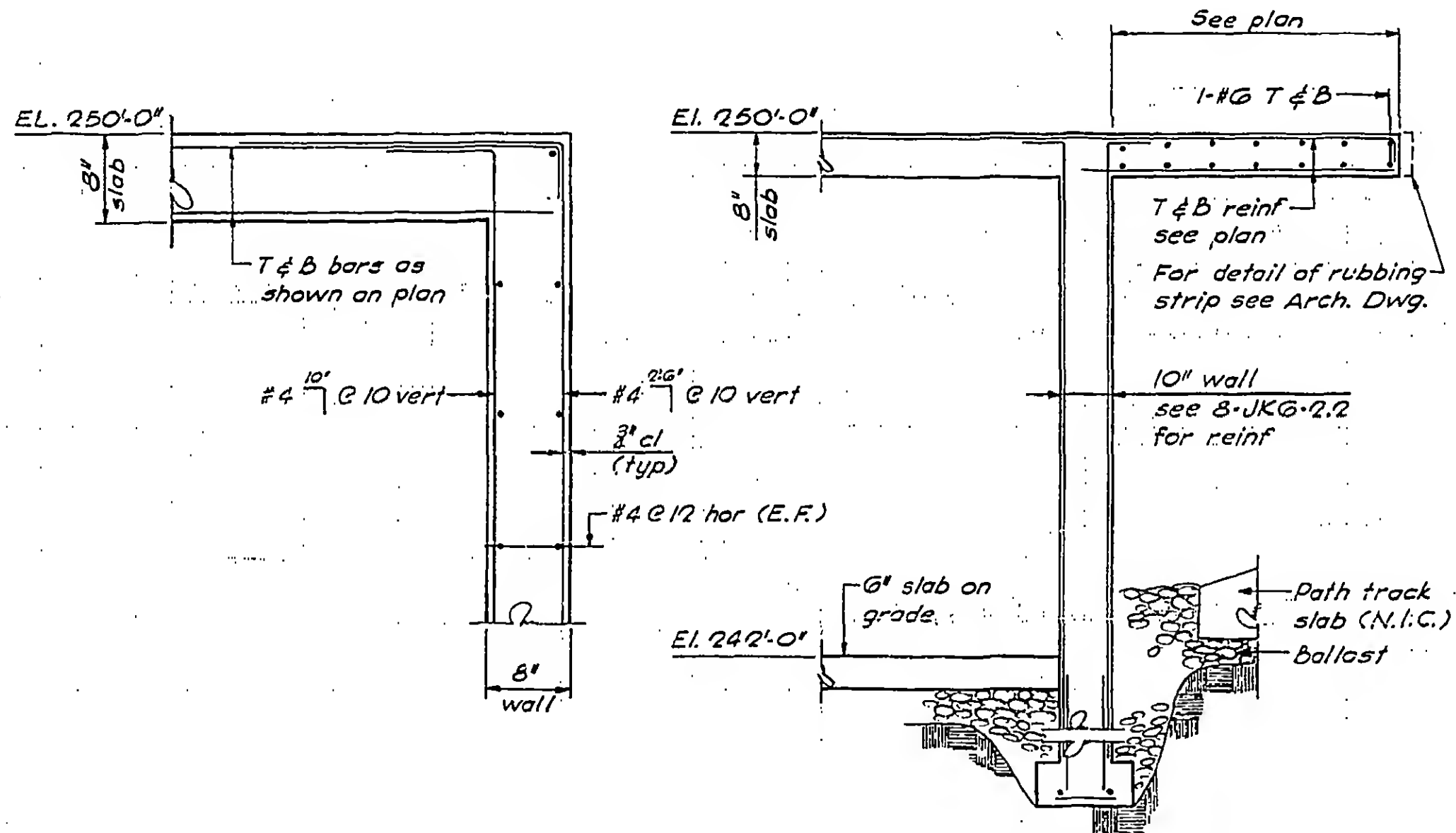
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE SECTIONS AT EL. 250'-0"

DATE 11-13-69

REVISIONS

SECTION K-K
(1" = 1'-0")SECTION L-L
(1/2" = 1'-0")

DESIGNED

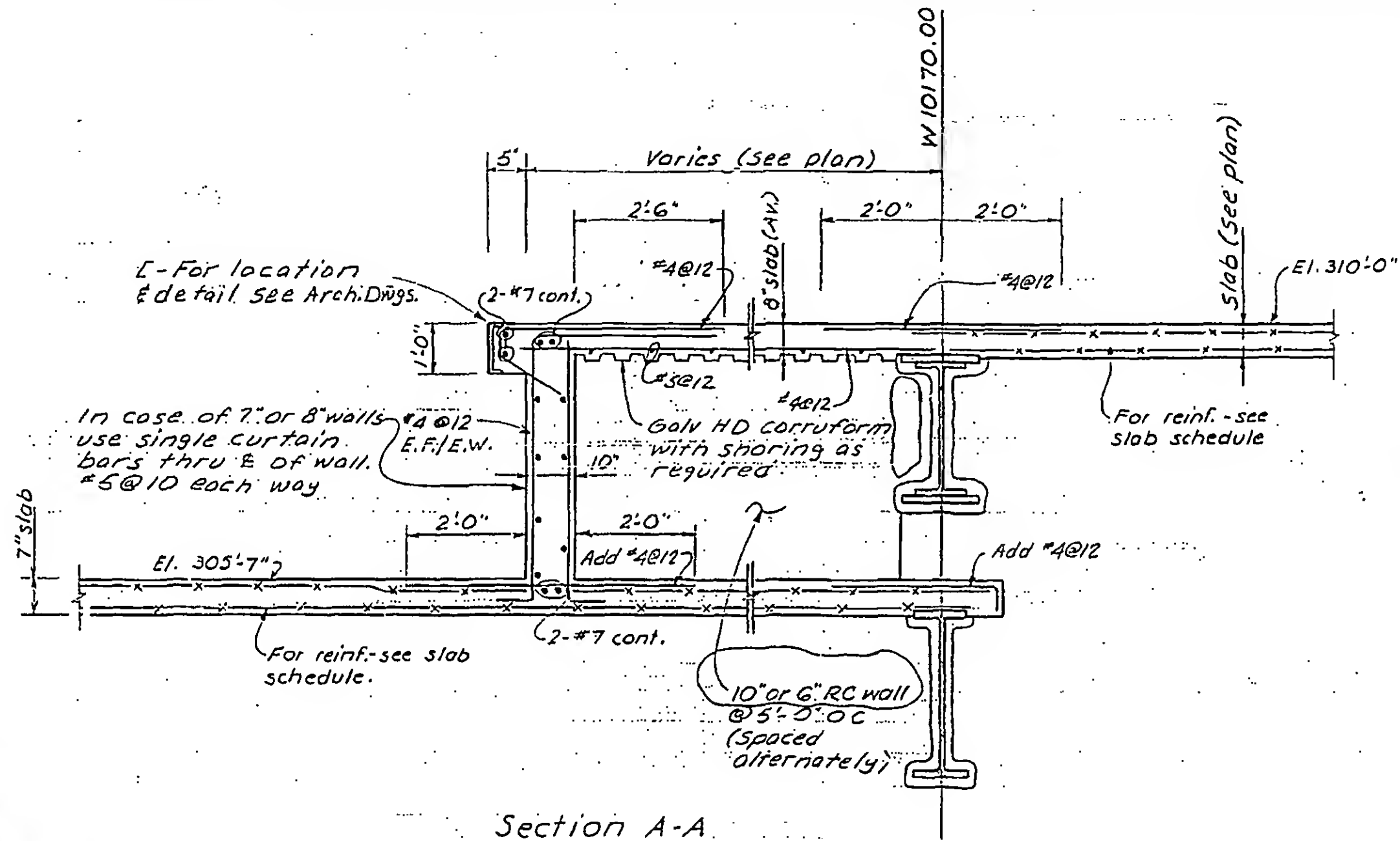
DRAWN
G.K.REVIEWED
E.L.

8-JK8-39.8

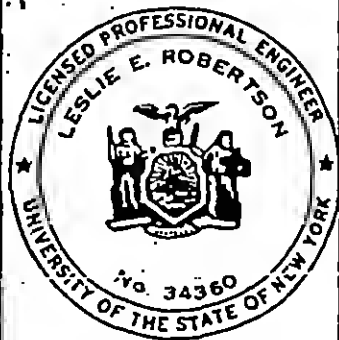
REVISIONS

5-12-69

6-1-70



Section A-A



DESIGNED

- DRAWN
- S.C.

REVIEWED

J.M. & E.L.

8-JK8-41.1

Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

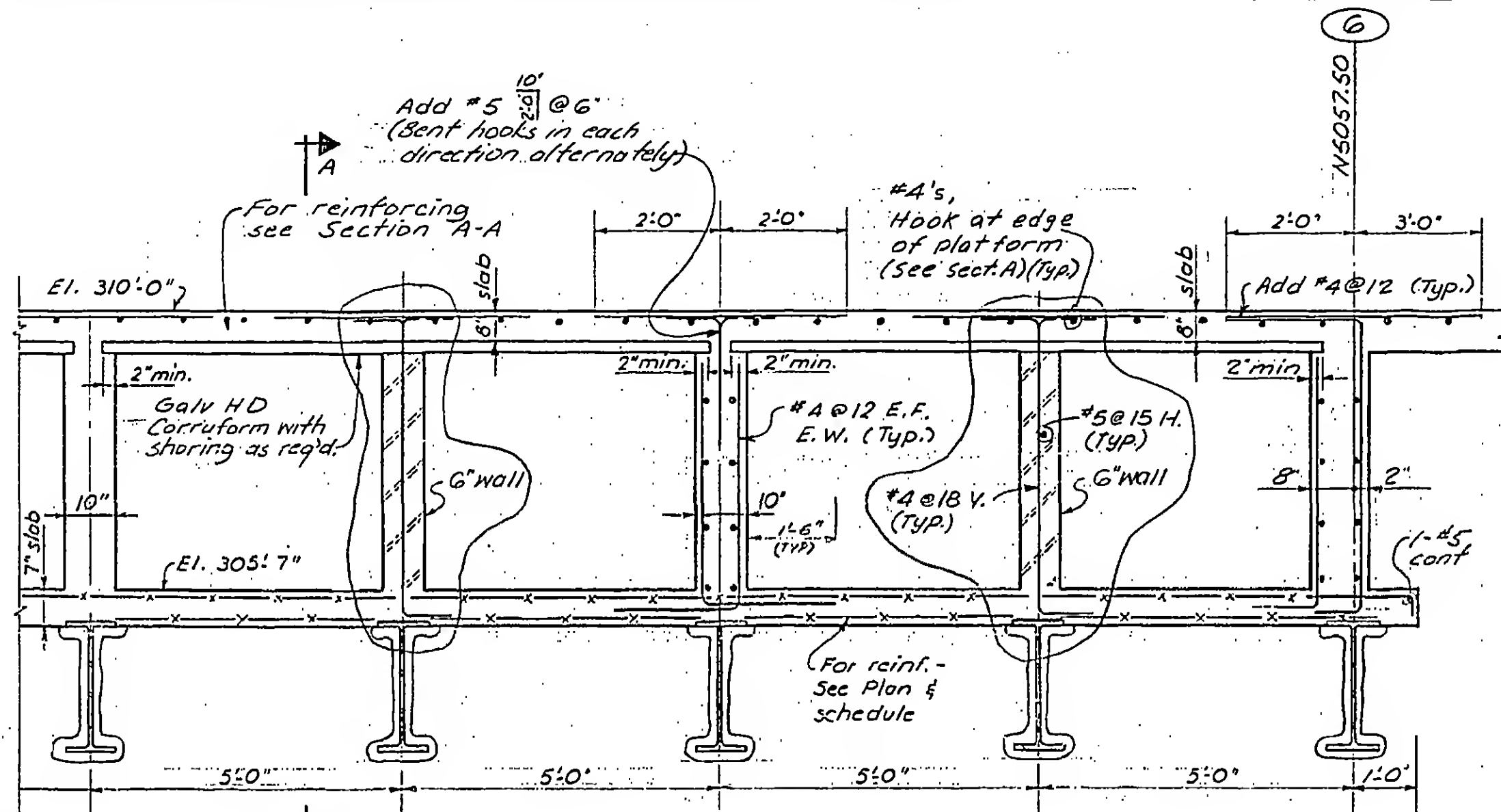
TITLE SECTIONS AT EL. 310'-0"

DATE 12-18-68

REVISIONS

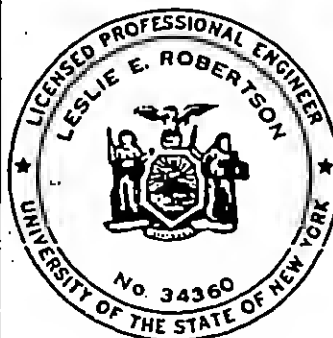
5-12-69

6-1-70



8-JK8-41.1

Section B-B



DESIGNED

DRAWN

S.C.

REVIEWED

J.M. & E.L.

-8- JK8-41.2

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

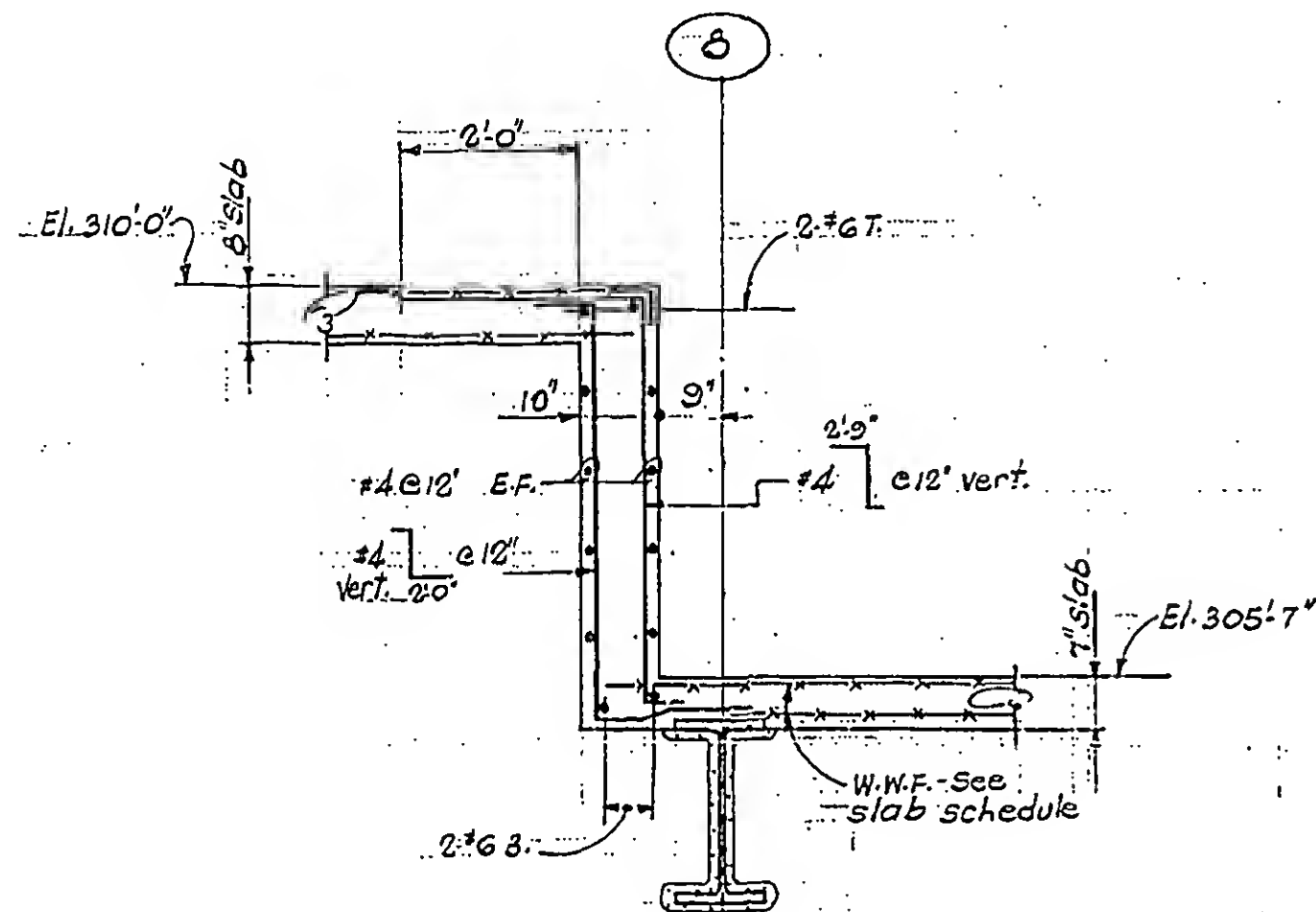
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

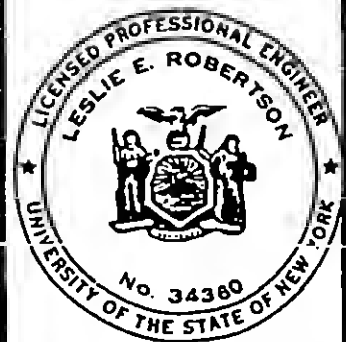
TITLE SECTION EL. 310'

DATE 12-18-68

REVISIONS



Section C-C



DESIGNED

DRAWN

S.T.M.

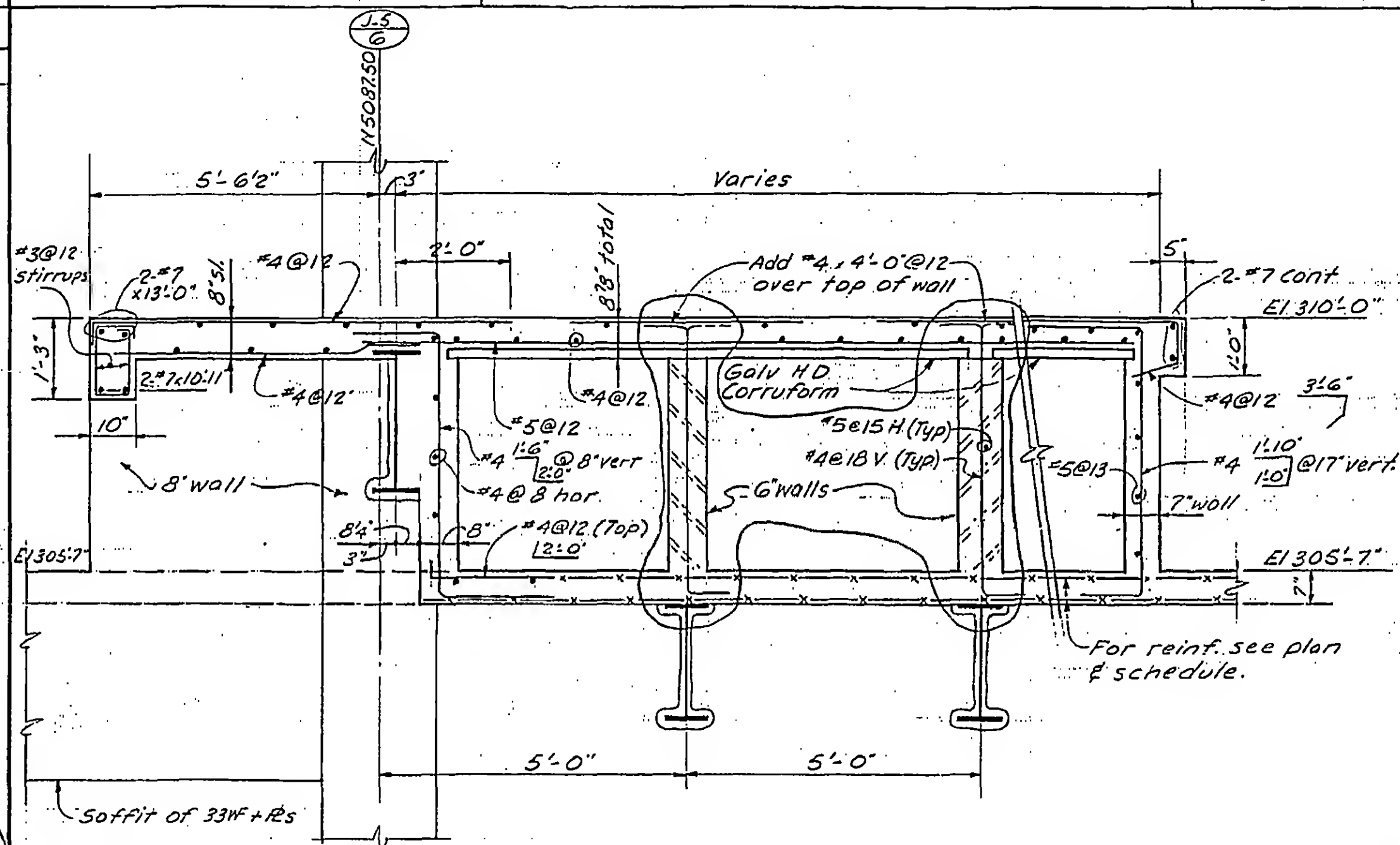
REVIEWED

J.M. & E.L.

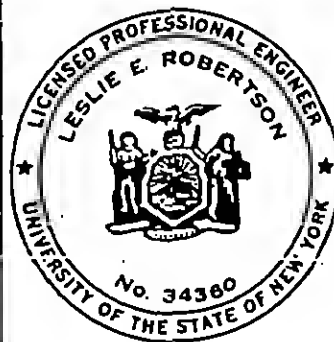
8-JKB-41.3

REVISIONS

6-1-70



Section D-D



DESIGNED

DRAWN

RESULTS

8-JK8-91.4

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

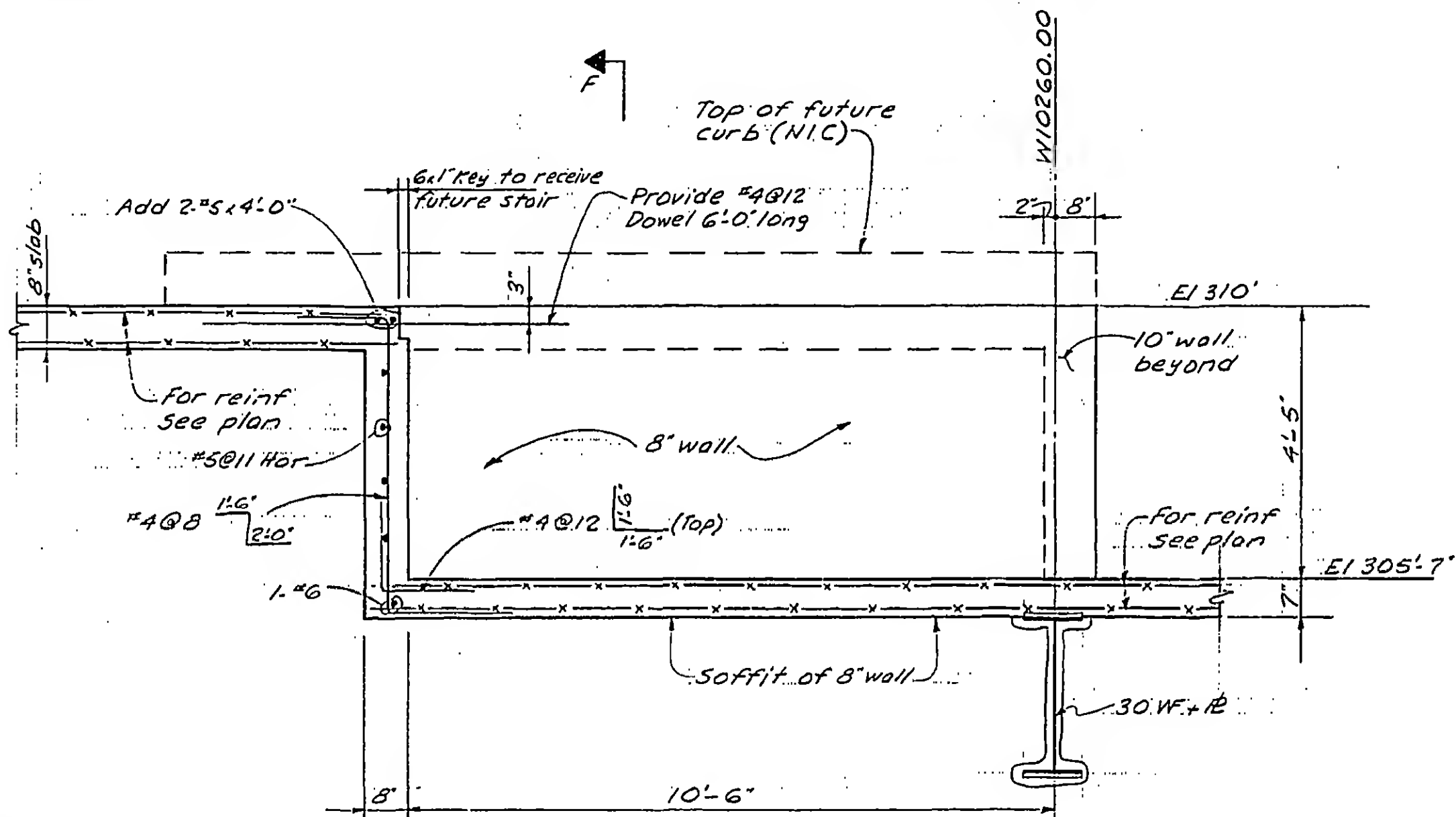
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE SECTIONS AT ELEVATION 310'-0"

DATE 5-12-69

REVISIONS



DESIGNED

DRAWN A.F.

REVIEWED E.L.

B-JK8-41.5

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

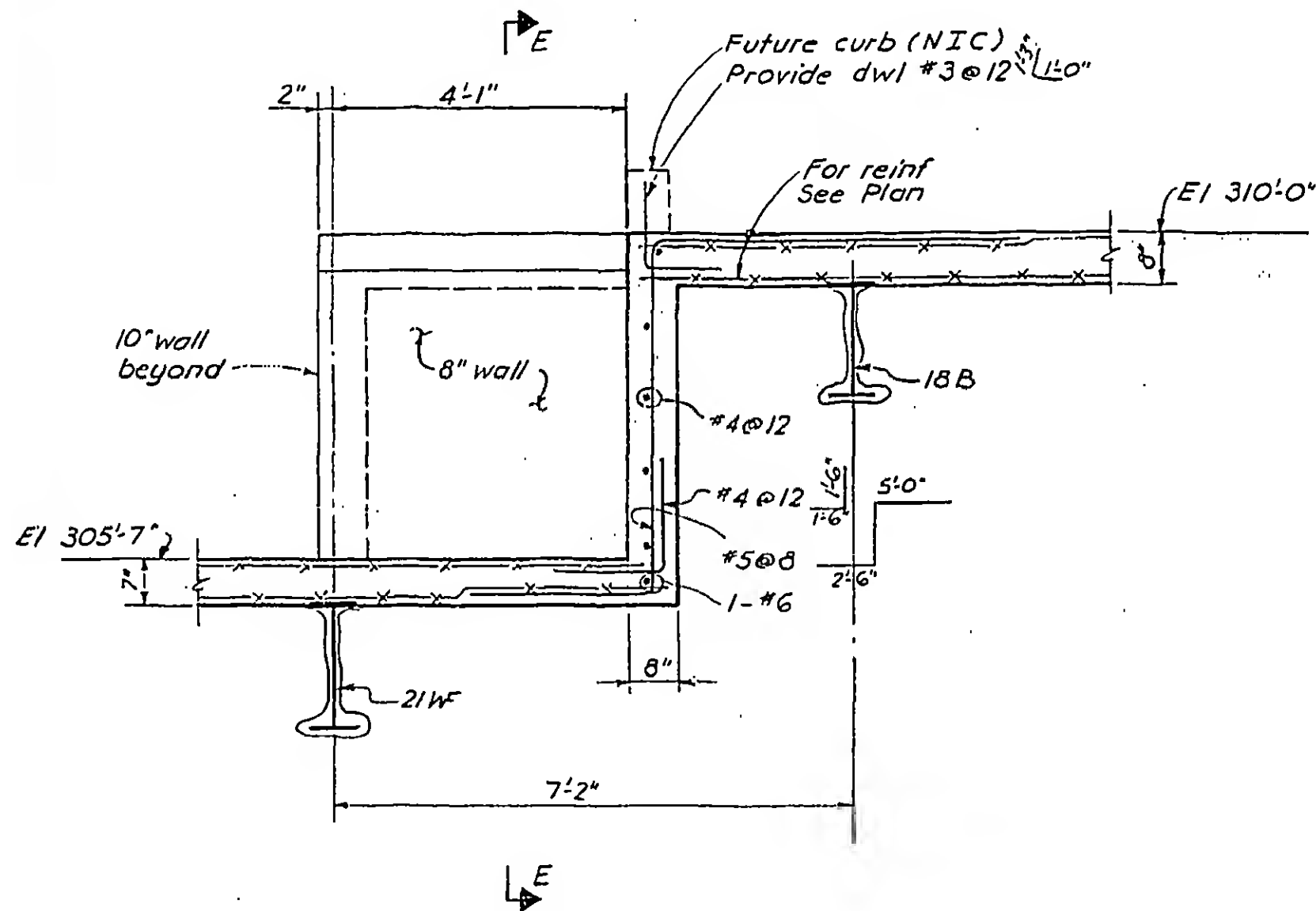
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

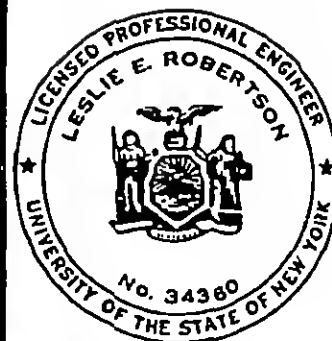
TITLE SECTIONS AT EL 310'-0"

DATE 5-12-69

REVISIONS



Section F-F



DESIGNED

DRAWN
F. Smith

REVIEWED
E.L.

8-JK8-41.6

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

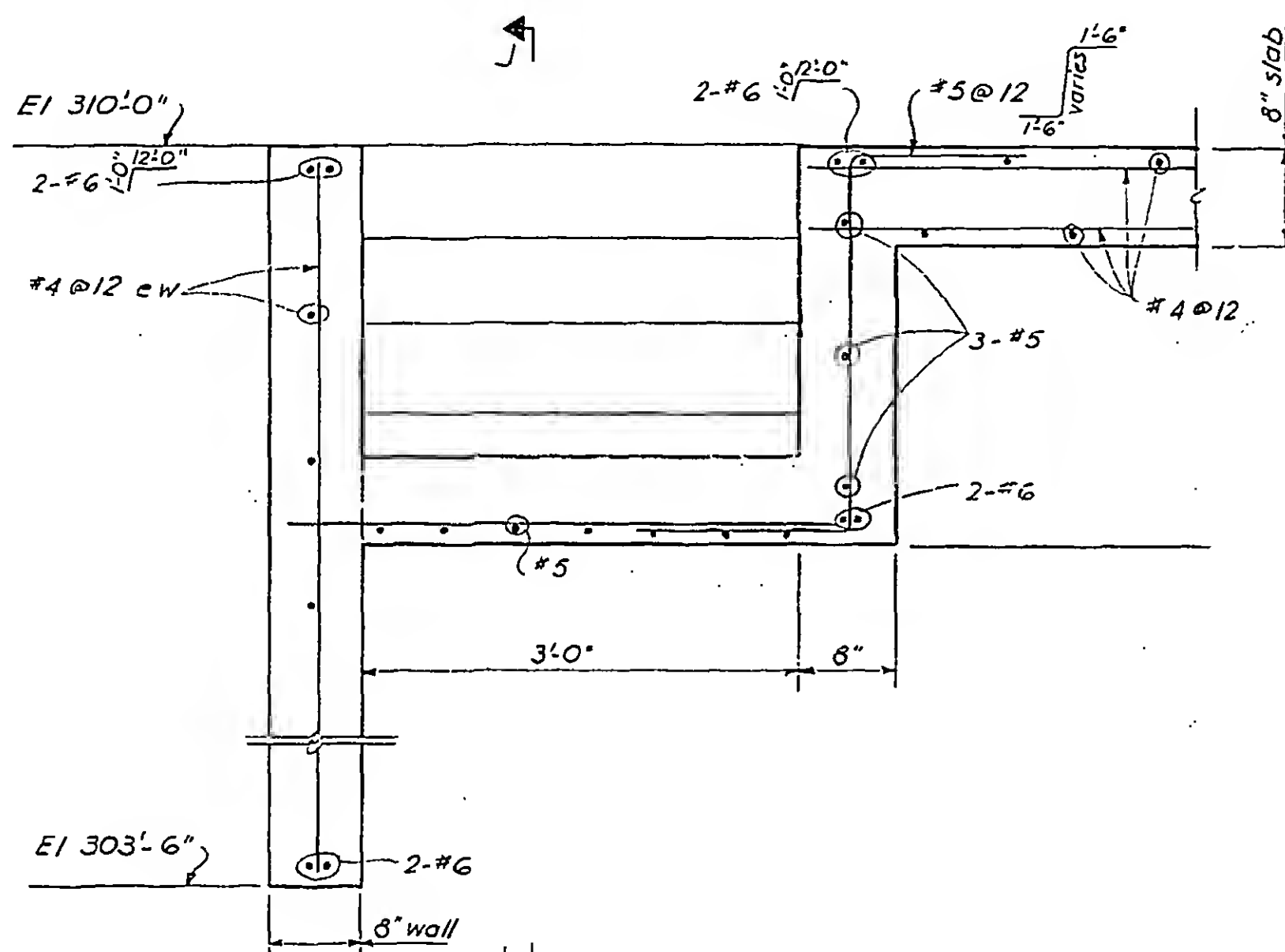
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

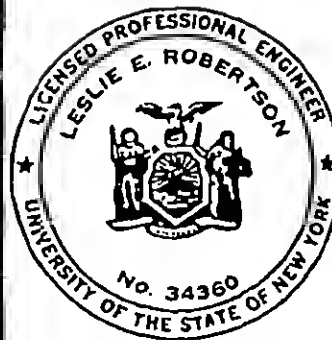
TITLE SECTIONS AT EL 310'-0"

DATE 5-12-69

REVISIONS



Section H-H



DESIGNED

DRAWN

E. Smith

REVIEWED

E.L.

8-JK8-41.7

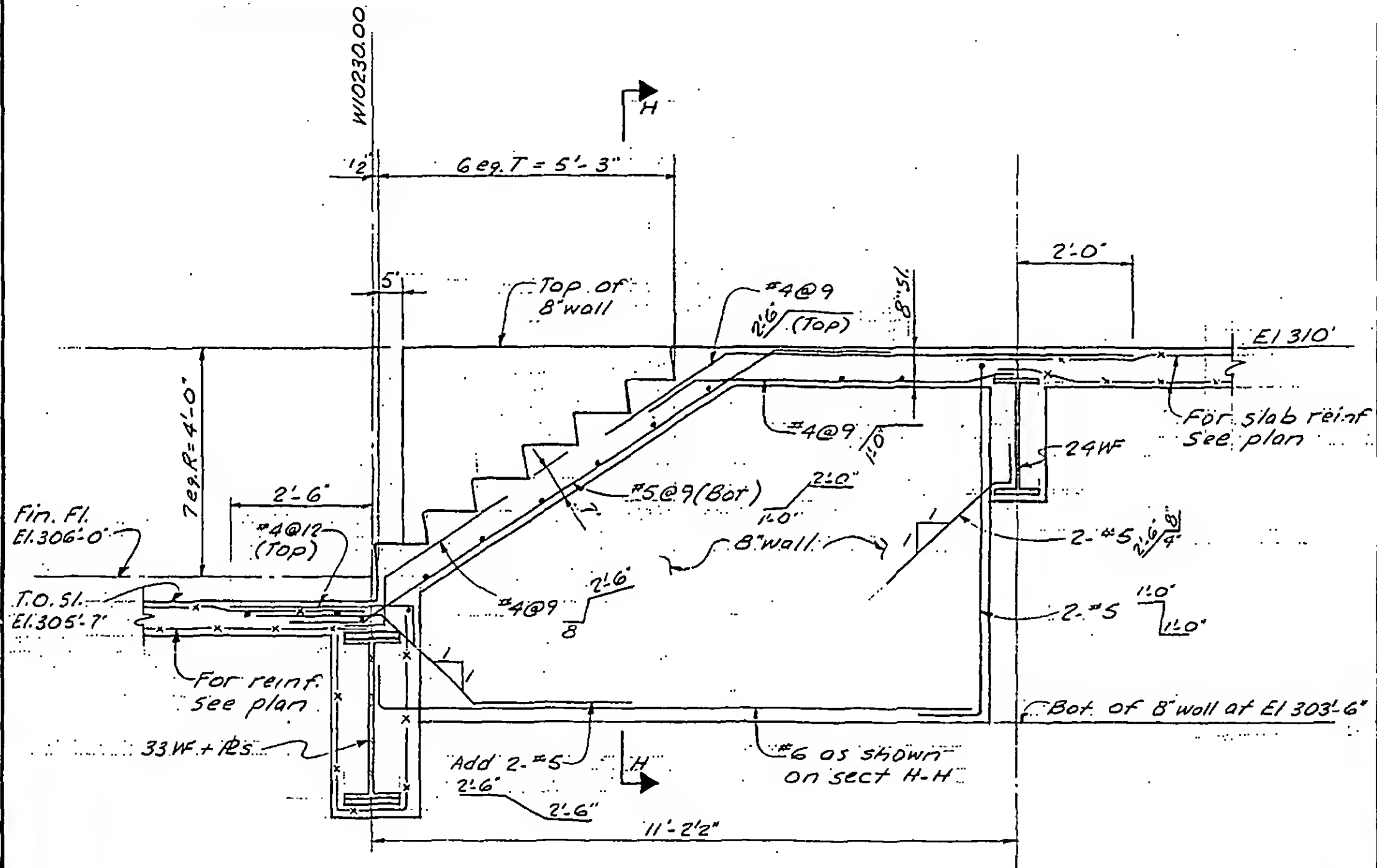
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER.

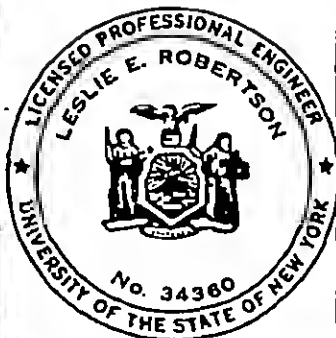
TITLE .. SECTIONS AT EL. 310'-0"

DATE 5-12-69

REVISIONS



Section J-J



DESIGNED

DRAWN

REVIEWED

EL:

8-JK8-41.8

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

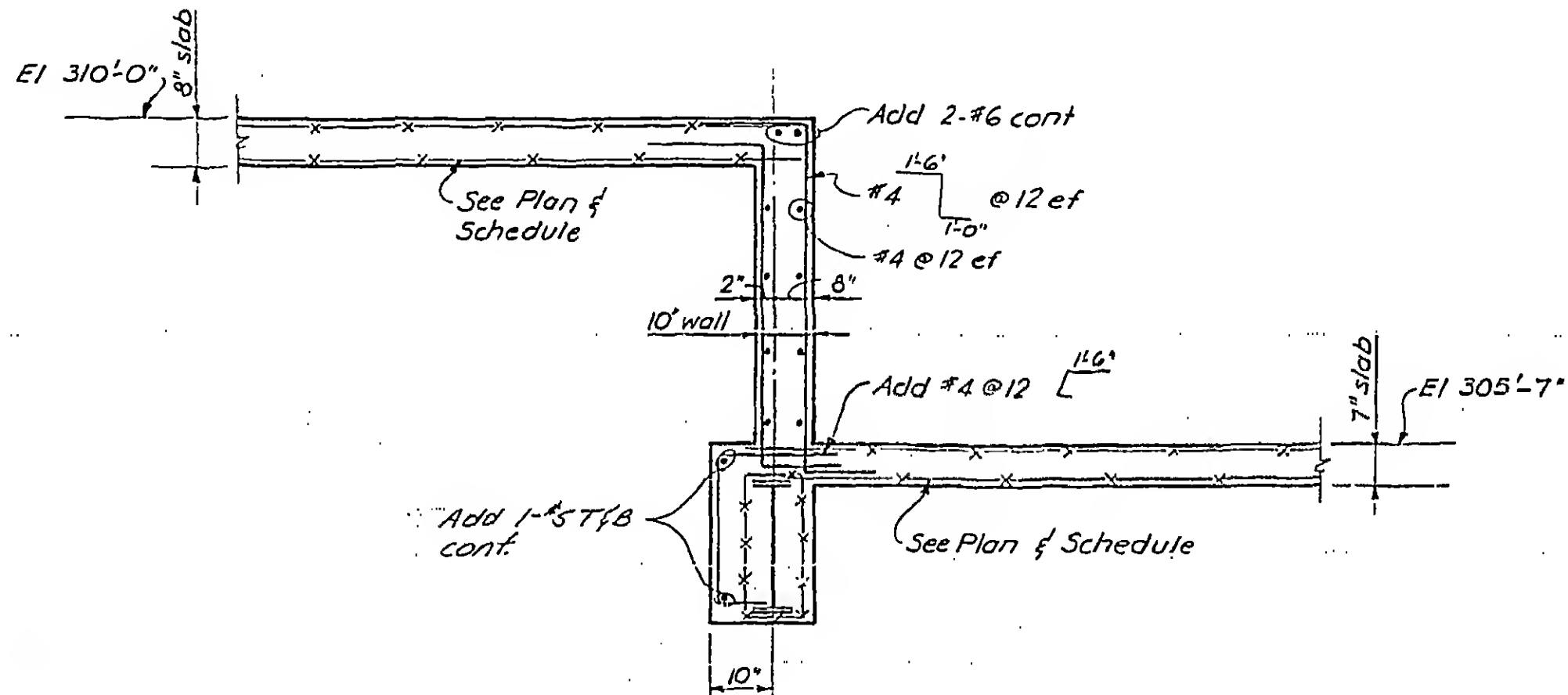
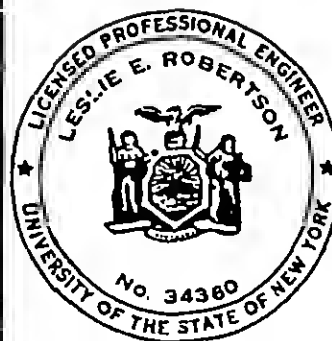
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE SECTIONS AT EL 310'-0"

DATE 5-12-69

REVISIONS

Section K-K

DESIGNED

DRAWN

F. Smith

REVIEWED

E.L.

8-JK8-41.9

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

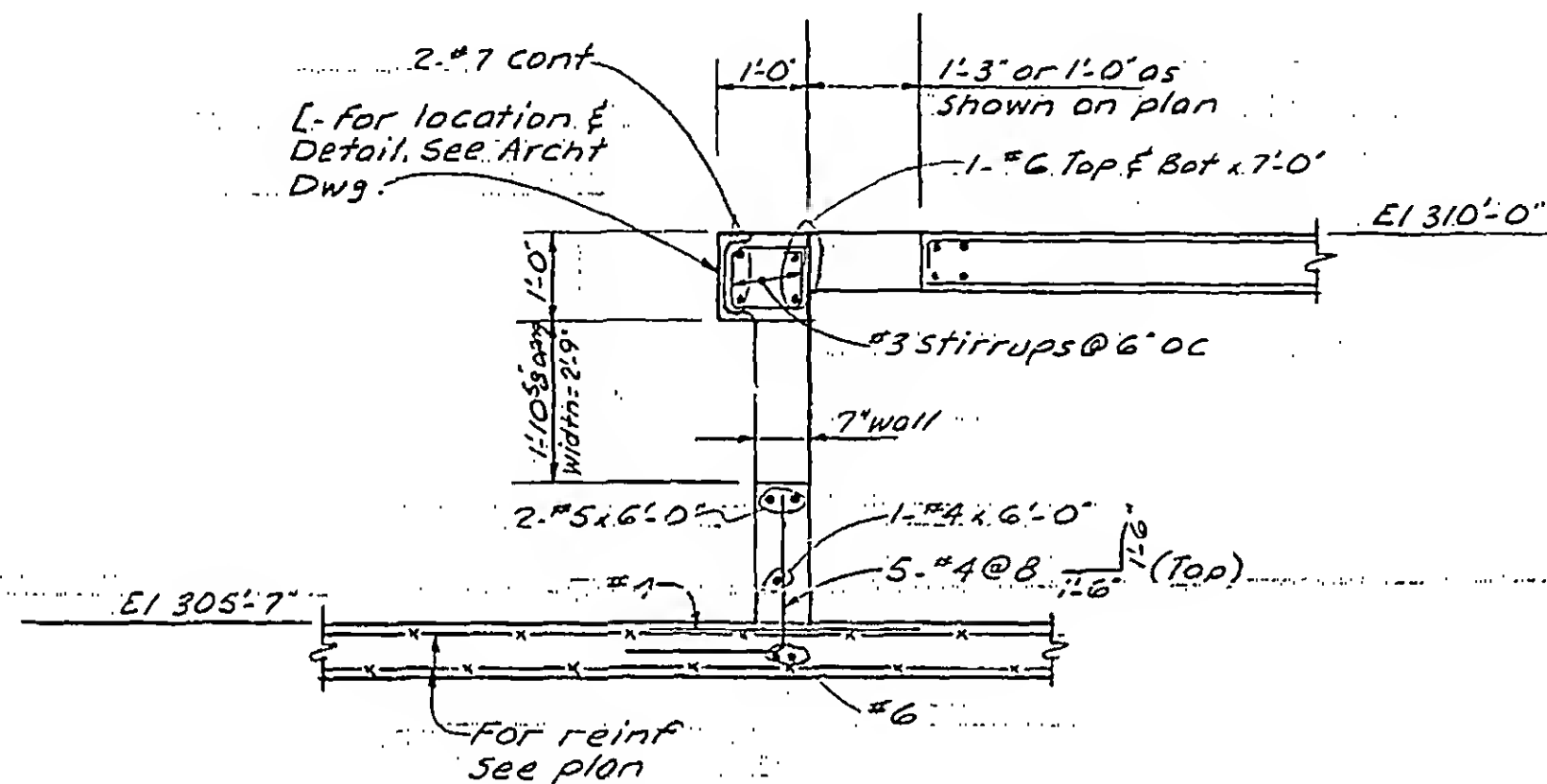
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE SECTIONS AT ELEVATION 310'-0"

DATE 5-12-69

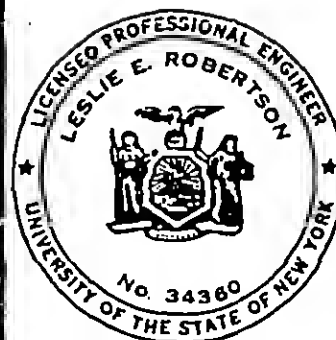
REVISIONS



Section L-L

Note:

All reinforcing symm about E of opening.



DESIGNED

DRAWN

A.F.

REVIEWED

E.L.

6-JRB-4/10

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

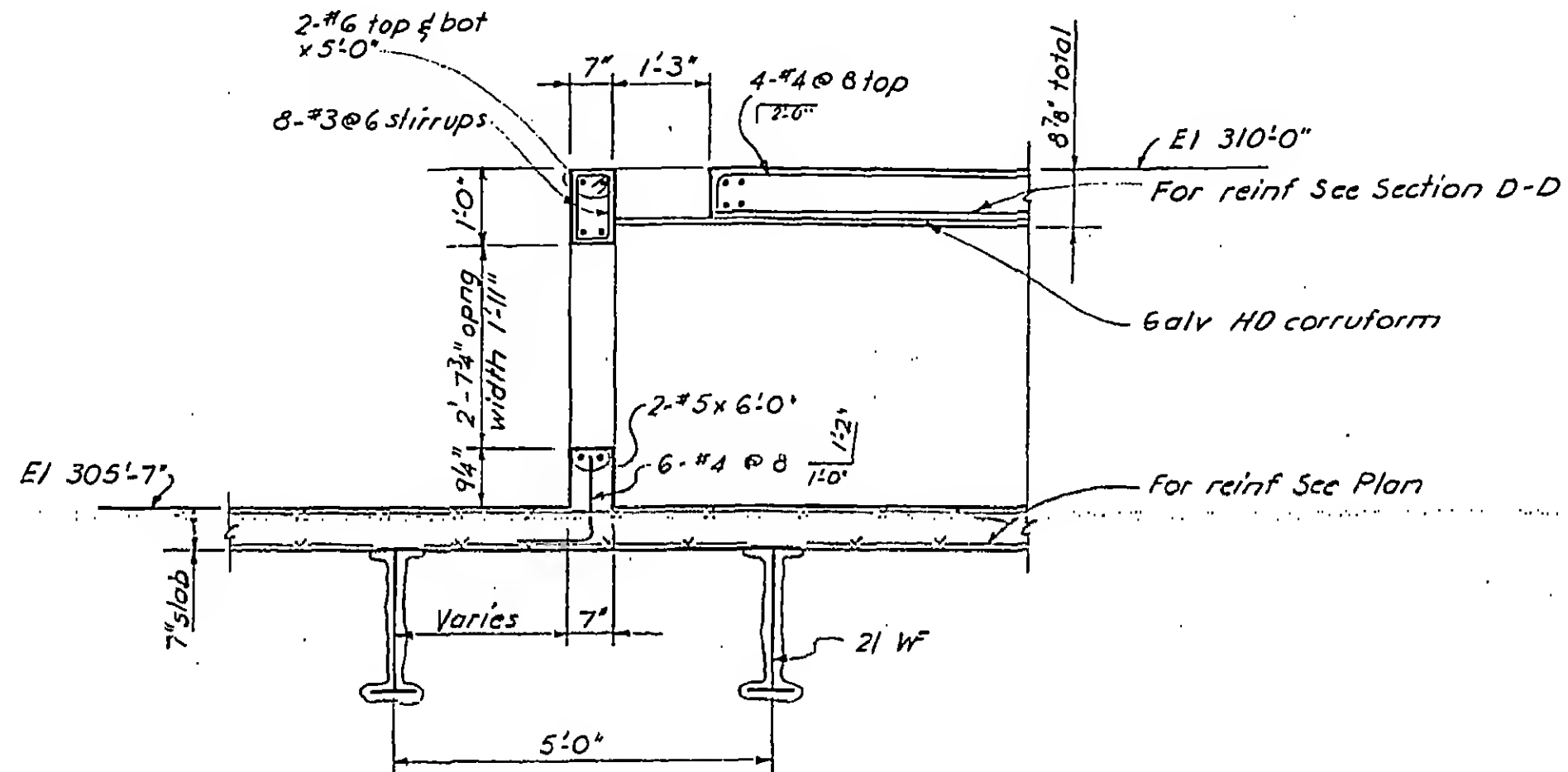
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

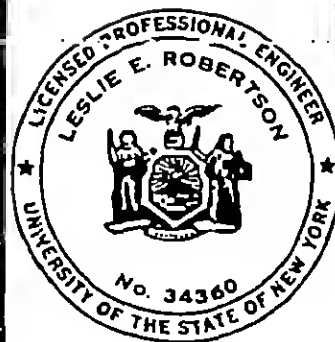
TITLE SECTIONS AT EL 310'-0"

DATE 5-12-69

REVISIONS



Section M-M



DESIGNED

DRAWN

E. Smith

REVIEWED

E-1

8-1KA-41-11

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

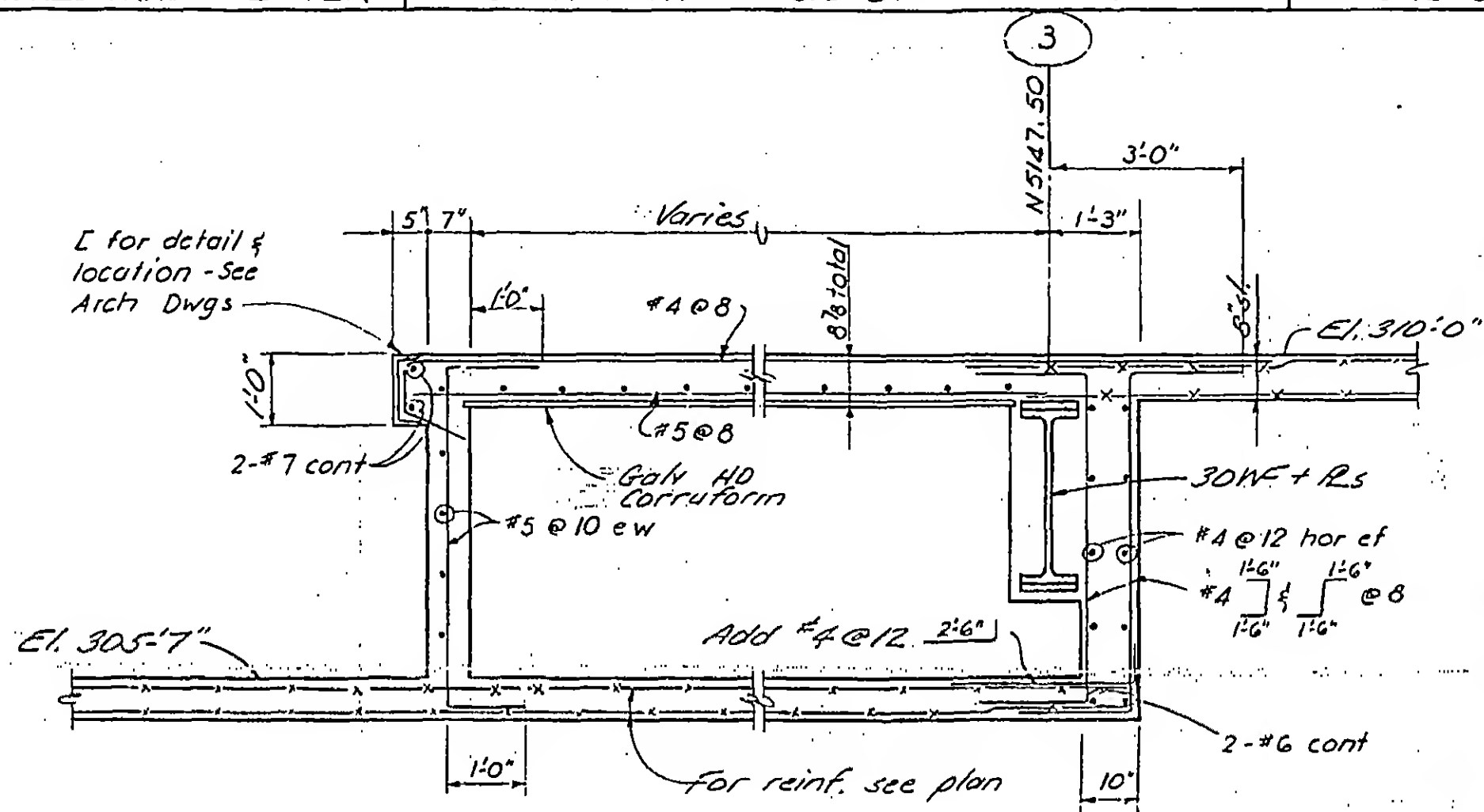
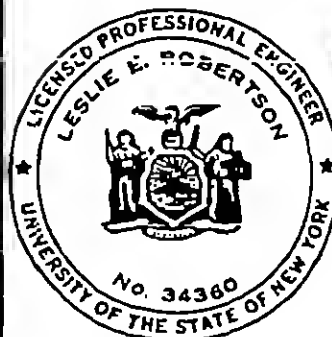
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE SECTION AT EL. 310'-0"

DATE 5-12-69

REVISIONS

Section N-N

DESIGNED

DRAWN
S.C.REVIEWED
E.L.

8-JKB-41.12

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

PROJECT

THE WORLD TRADE CENTER

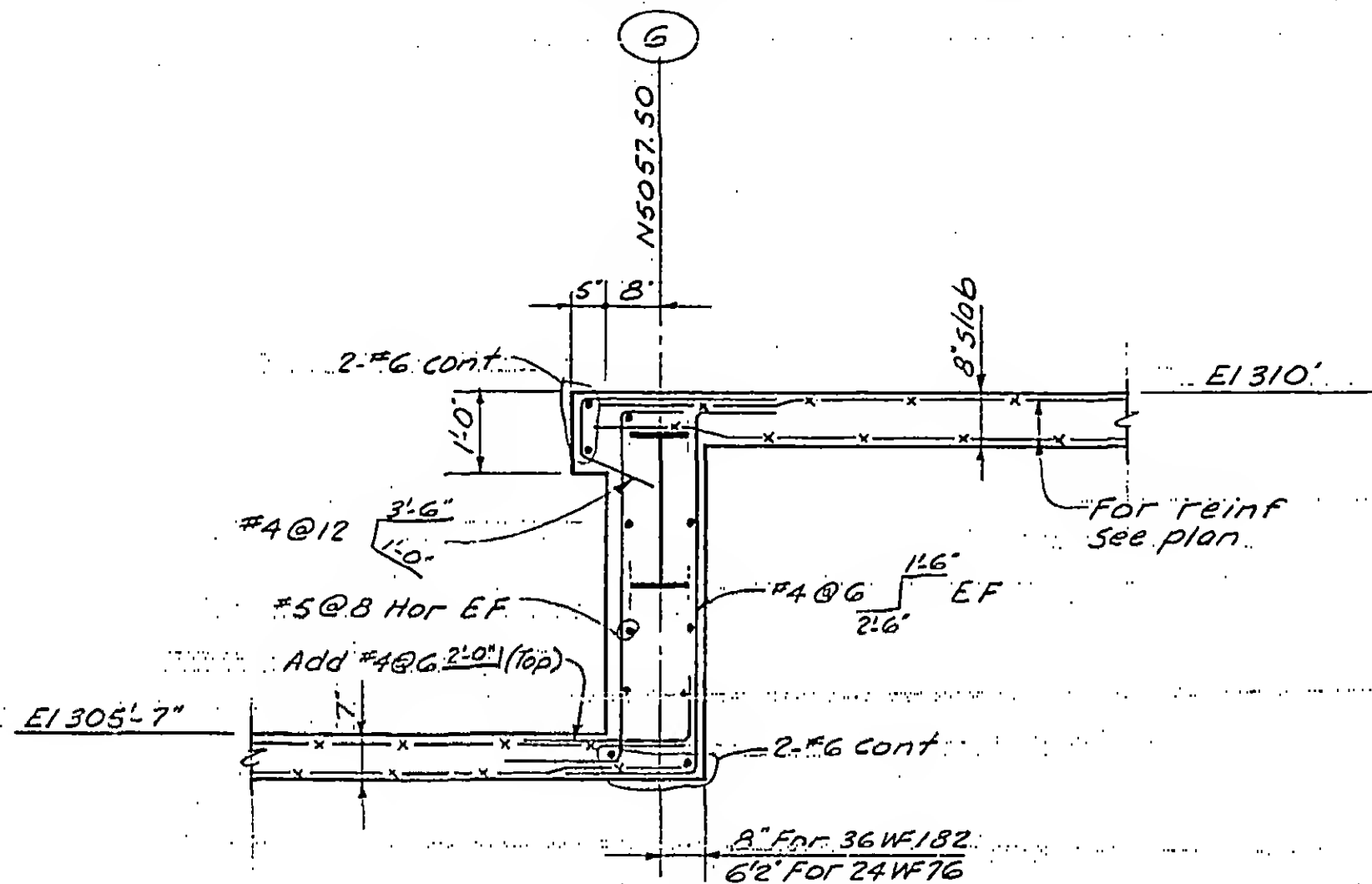
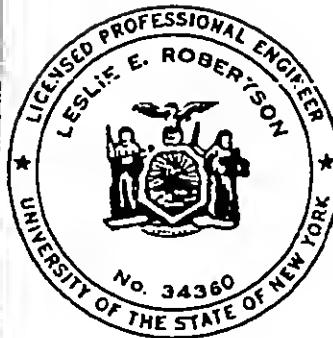
TITLE

SECTIONS AT ELEVATION 310'-0"

DATE

5-12-69

REVISIONS

Section P-P

DESIGNED

DRAWN
A.F.

REVIEWED

E.L.

8-JK8-41.13

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

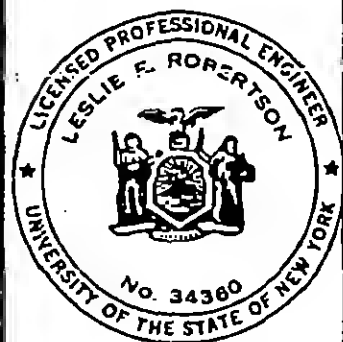
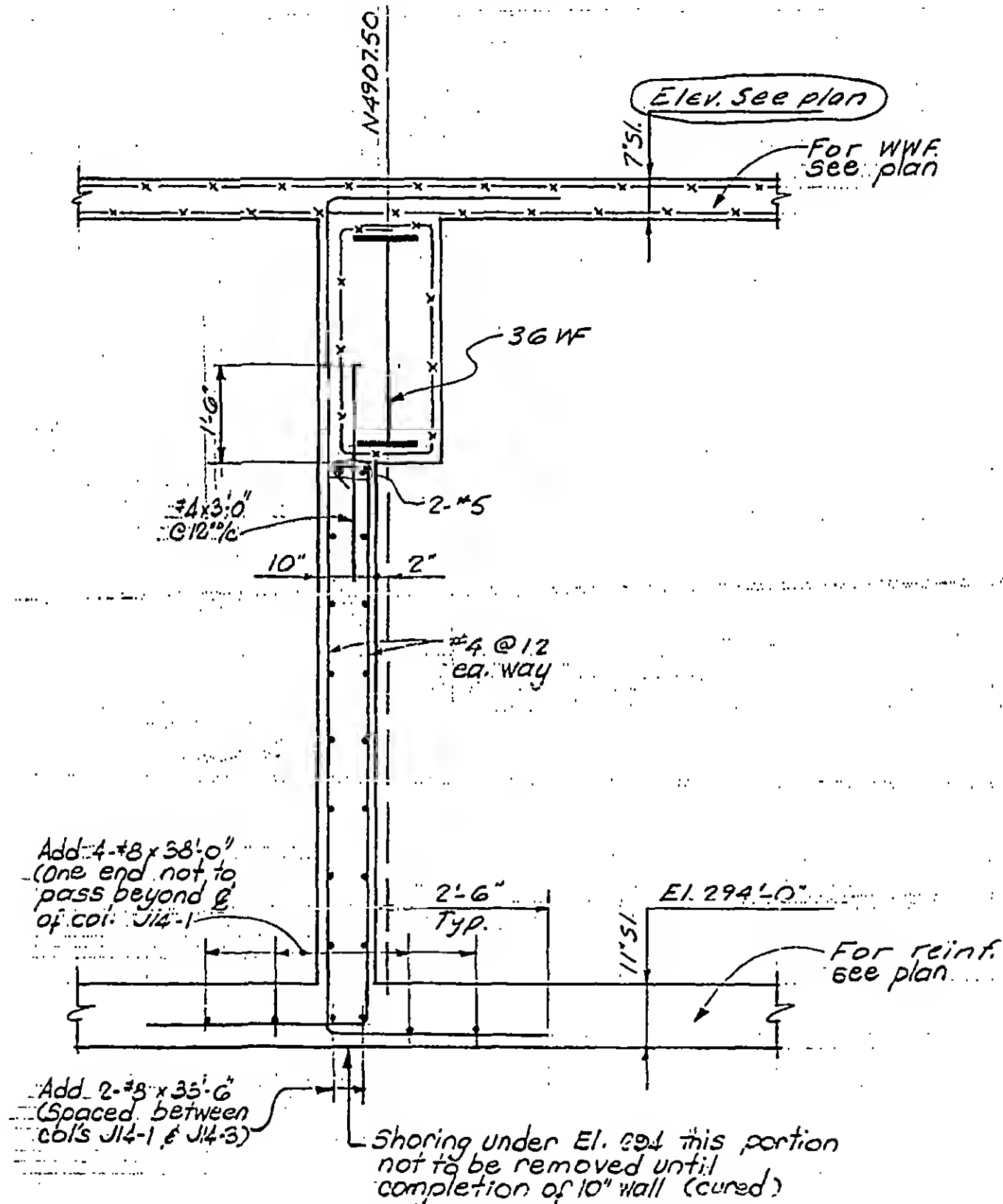
PROJECT THE WORLD TRADE CENTER

TITLE SECTIONS AT EL. 310'-0"

DATE 12-18-68

REVISIONS

1-17-69



DESIGNED

DRAWN

S.C.

REVIEWED

J.M. & E.L.

Section Q-Q
(For extent see plan)

0-11-0-71.14

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

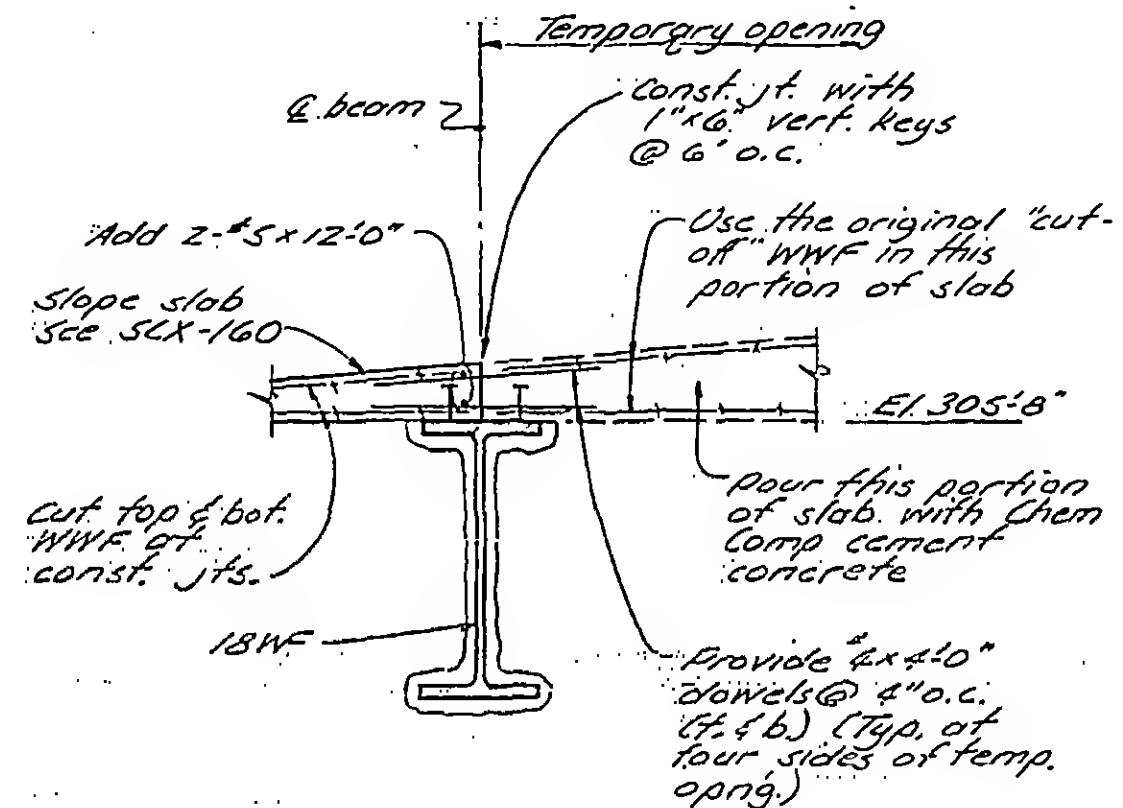
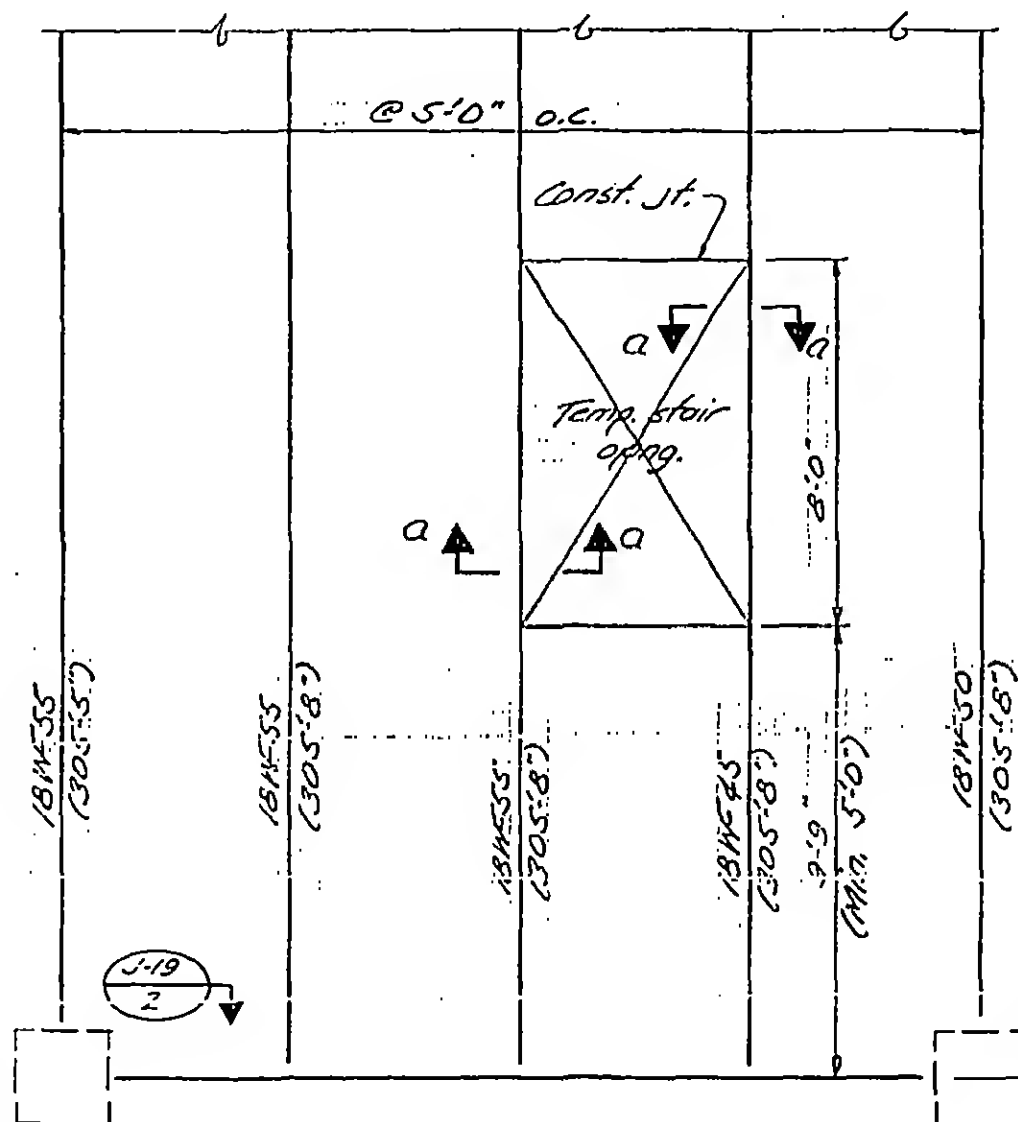
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE SECTIONS AT EL. 310

DATE 1-31-69

REVISIONS



Section a-a

PART PLAN AT STREET LEVEL
(1/4"=1'-0")



DESIGNED

DRAWN

J. Adams

REVIEWED

E.L.

8-320-41.15

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

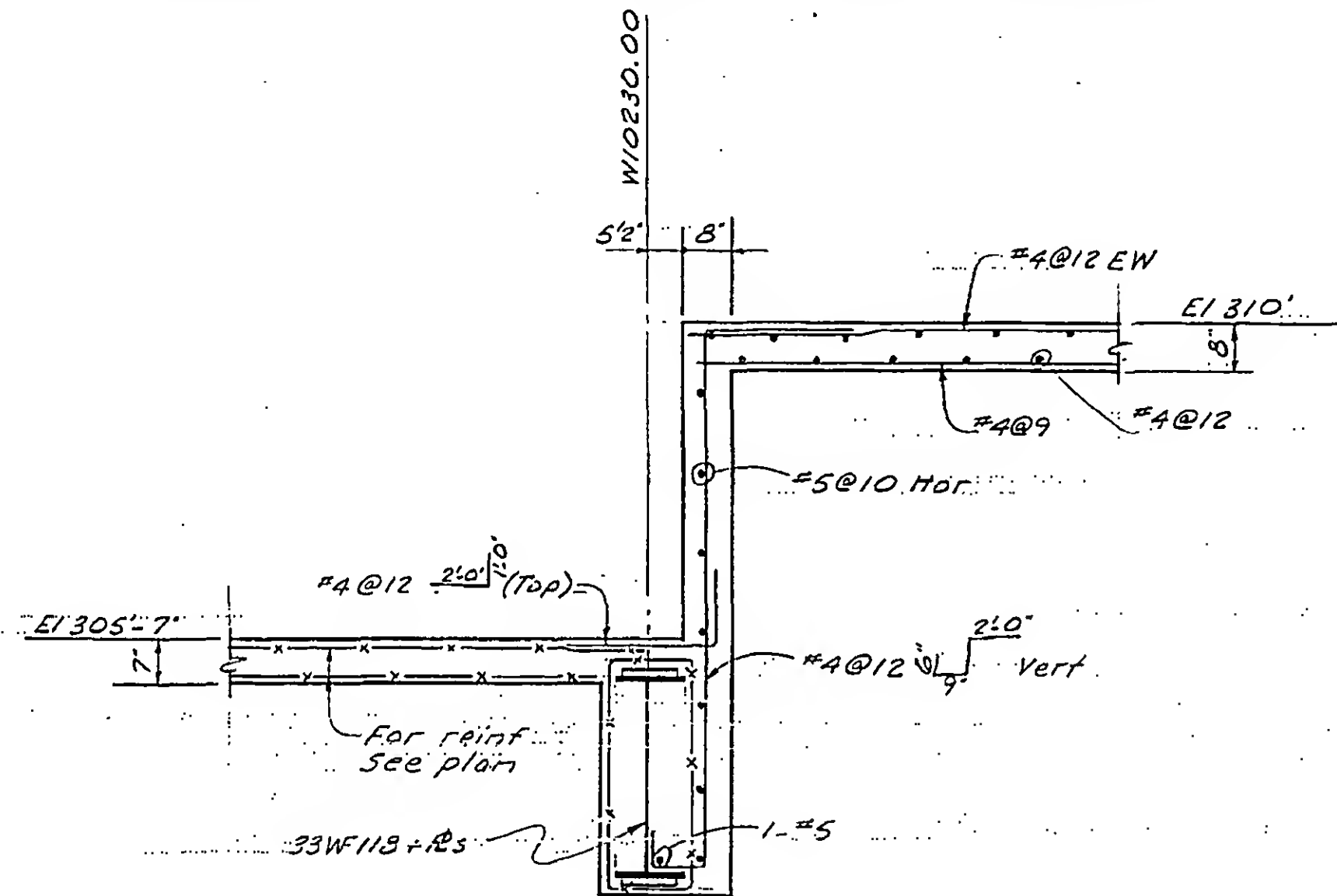
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

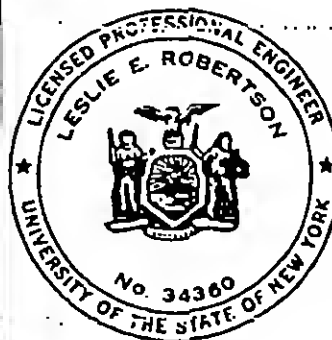
TITLE SECTIONS AT ELEVATION 310'-0"

DATE 5-12-69

REVISIONS



Section R-R



DESIGNED

DRAWN A.F.

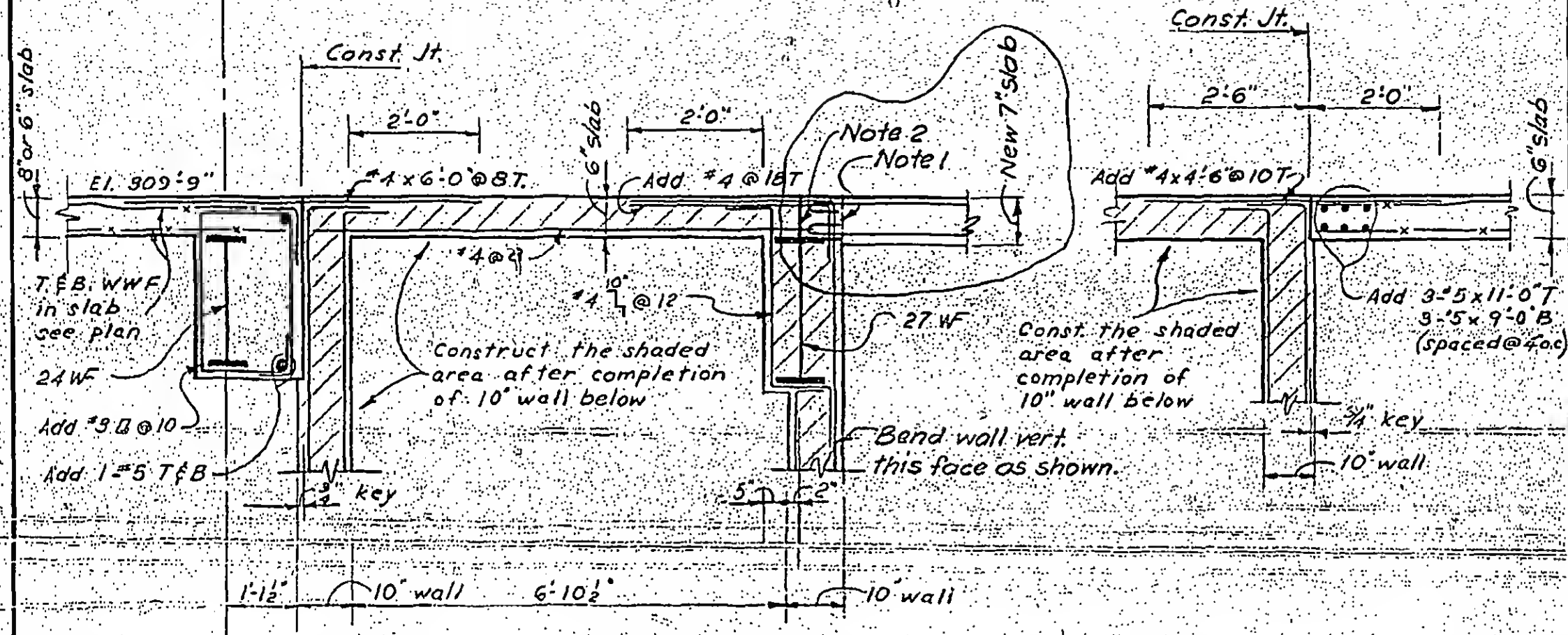
REVIEWED

33W118-RS

REVISIONS

10-29-71

41



Section J-J
(2"=1'-0")

Section 1-1
($\frac{1}{2}'' = 1'-0''$)

Notes:

1. Remove existing concrete without damaging exist. reinforcing.
2. Coat entire surface of exist. concrete with approved epoxy bonding compound prior to casting new slab.



DRAWN.

J.H.

REVIEWED

8-JK8-41.17

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

PROJECT

THE WORLD TRADE CENTER

TITLE

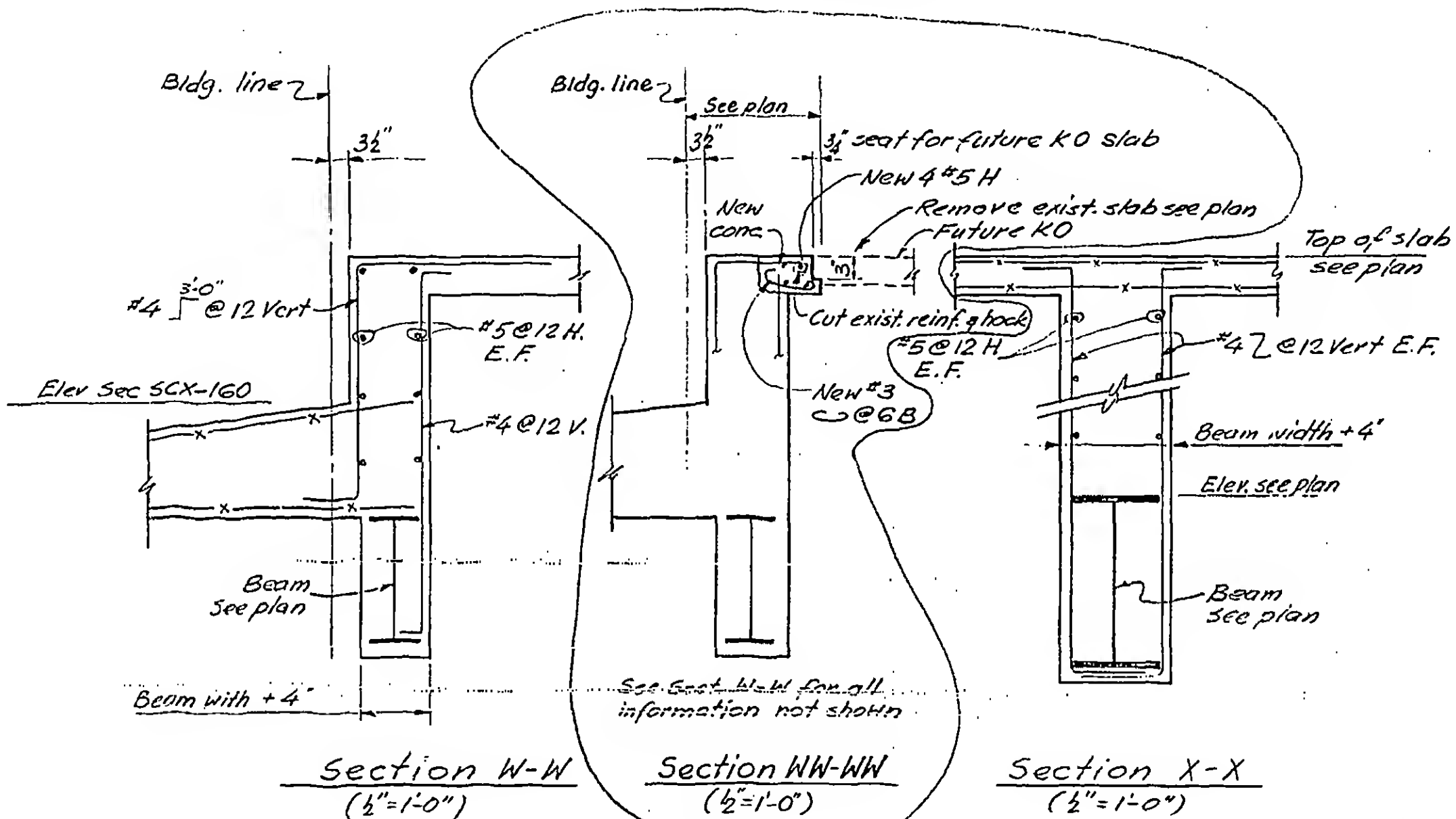
SECTIONS AT EL 310'-0"

DATE

9-12-69

REVISIONS

6-15-73



DESIGNED

DRAWN
J. GraciersREVIEWED
E.L.

8-JK8-41.19

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

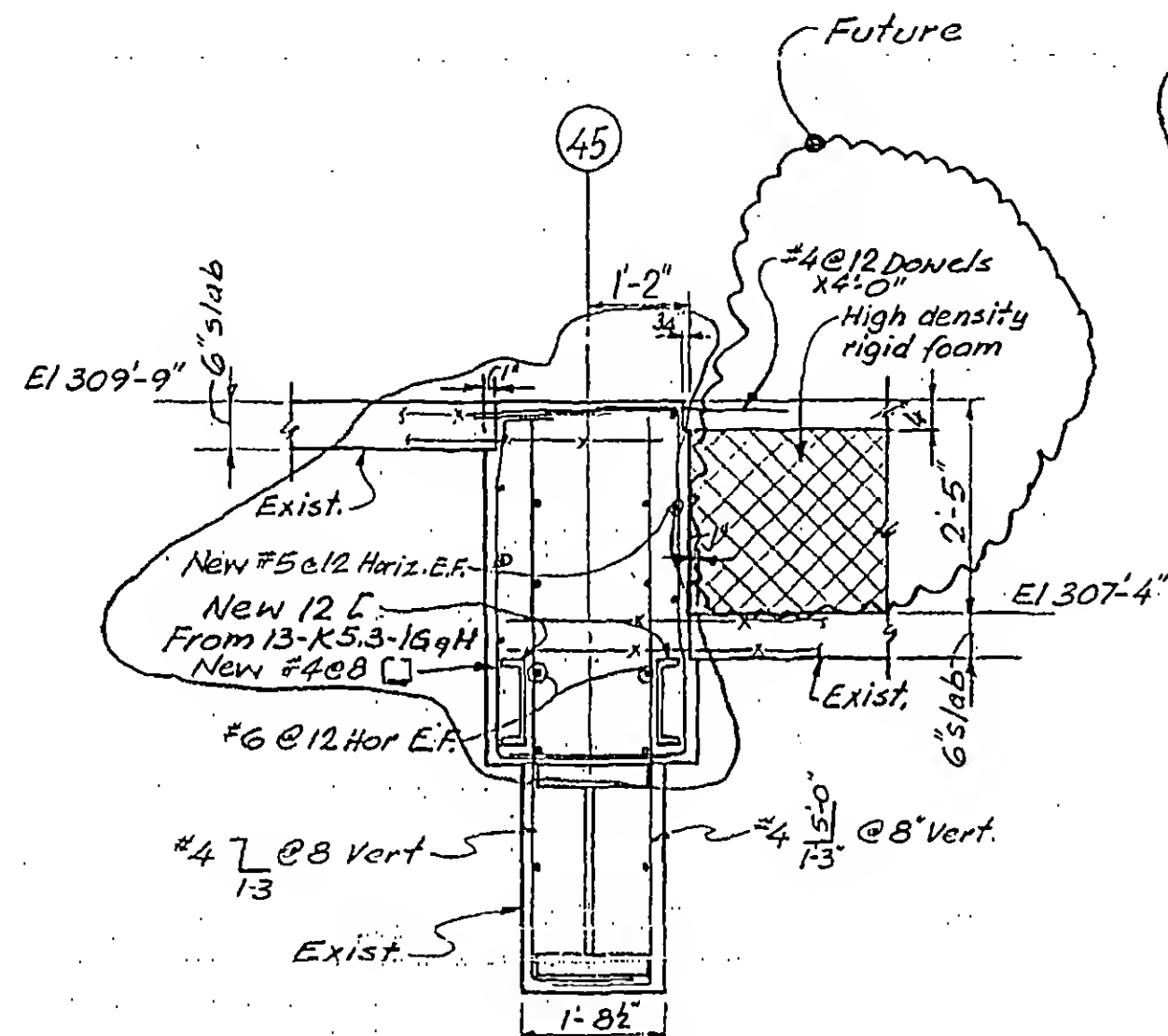
PROJECT THE WORLD TRADE CENTER

TITLE SECTION AT EL 310'-0"

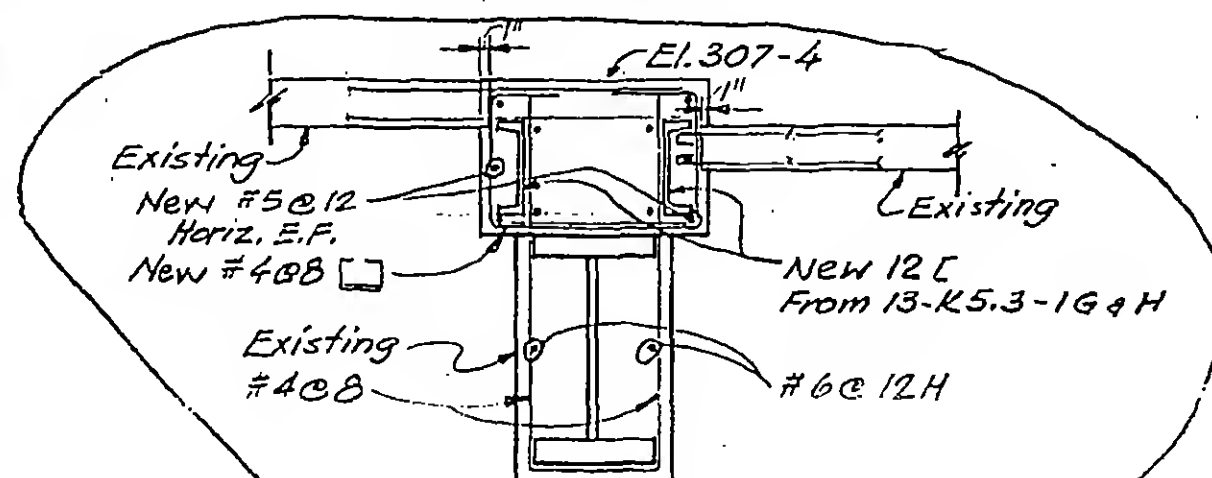
DATE 9-12-69

REVISIONS

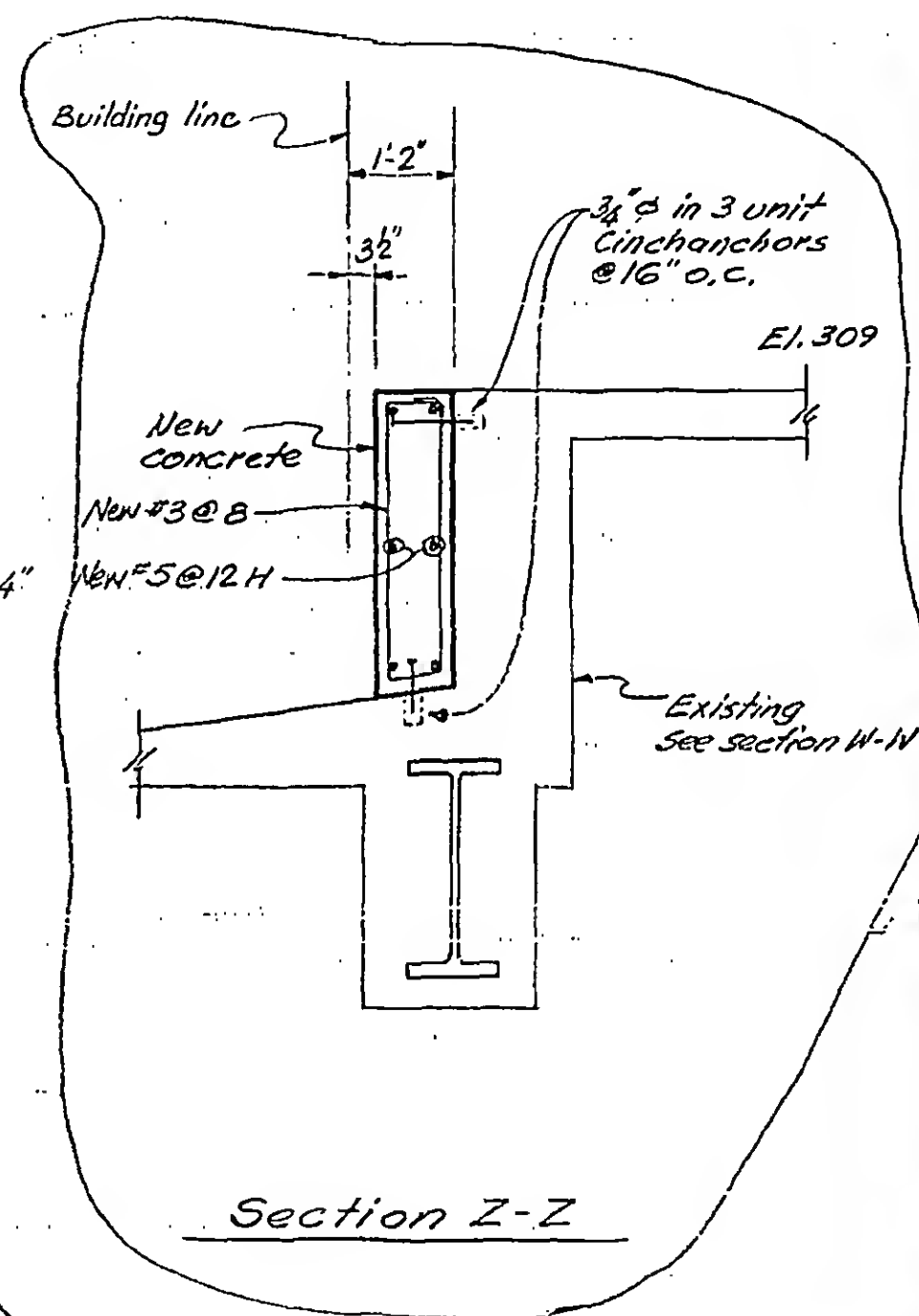
6-15-73



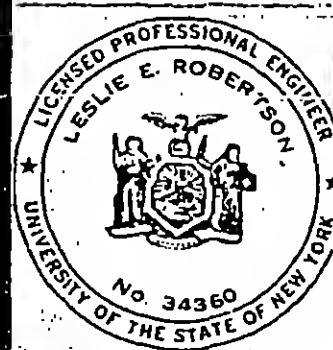
Section Y-Y



Section YY-YY



Section Z-Z



DESIGNED

DRAWN J. Gricius

REVIEWED

E.L.

8-JK8-41.20

SKILLING - HELLE - CHRISTIANSEN - ROBERTSON

Structural & Civil Engineers

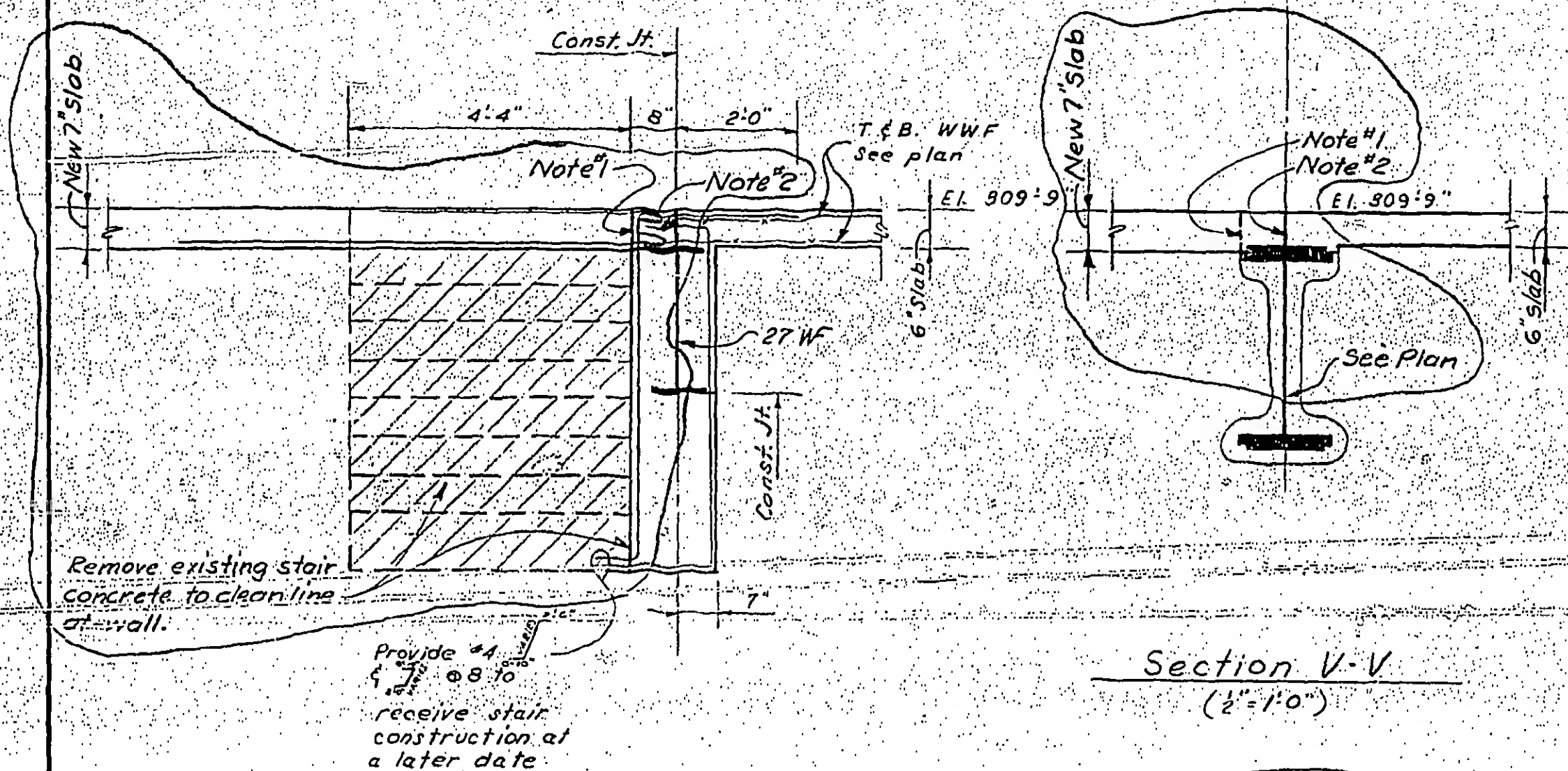
PROJECT THE WORLD TRADE CENTER

TITLE SECTIONS AT EL. 310'-0"

DATE 8-25-69

REVISIONS

10-29-71

Section U-U
(1/2" = 1'-0")Section V-V
(1/2" = 1'-0")See 8-JK8-41.17
for notes 1 & 2.DRAWN
J.H.REVIEWED
E.L.

8-JK8-41.18

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

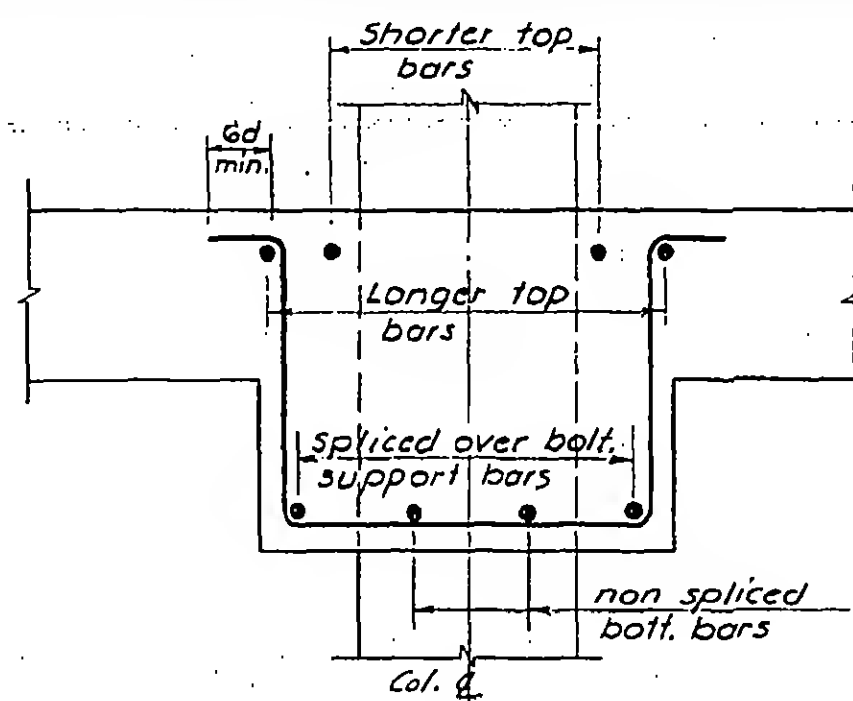
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

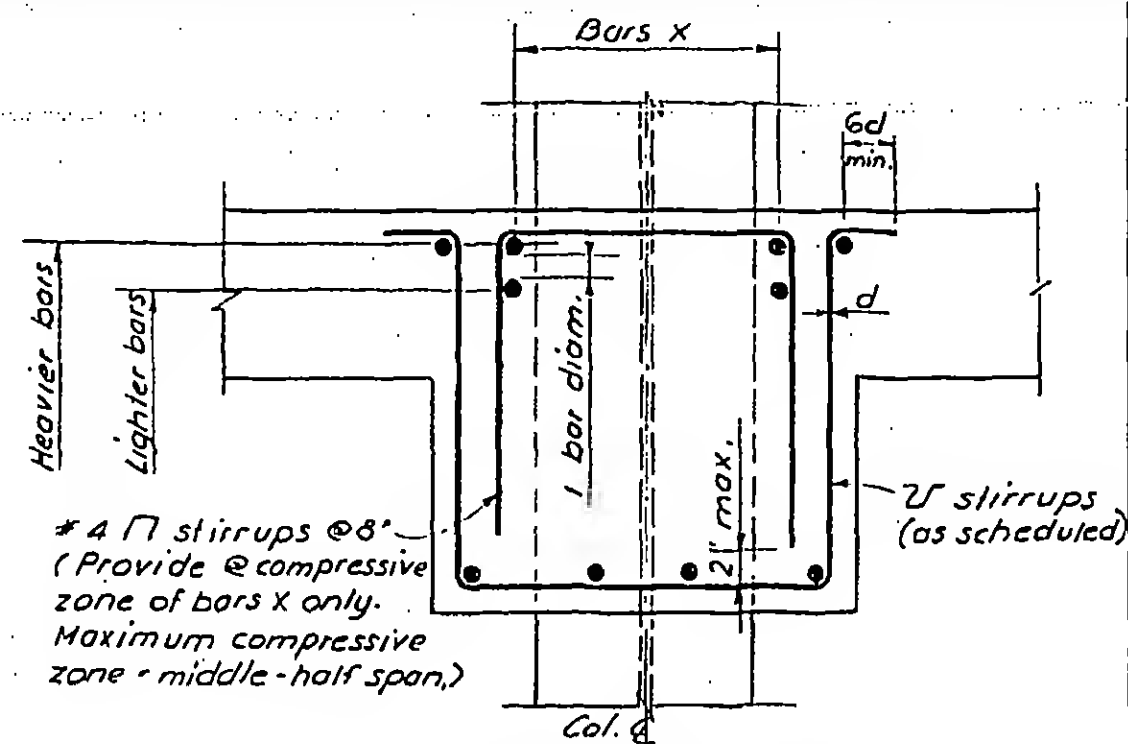
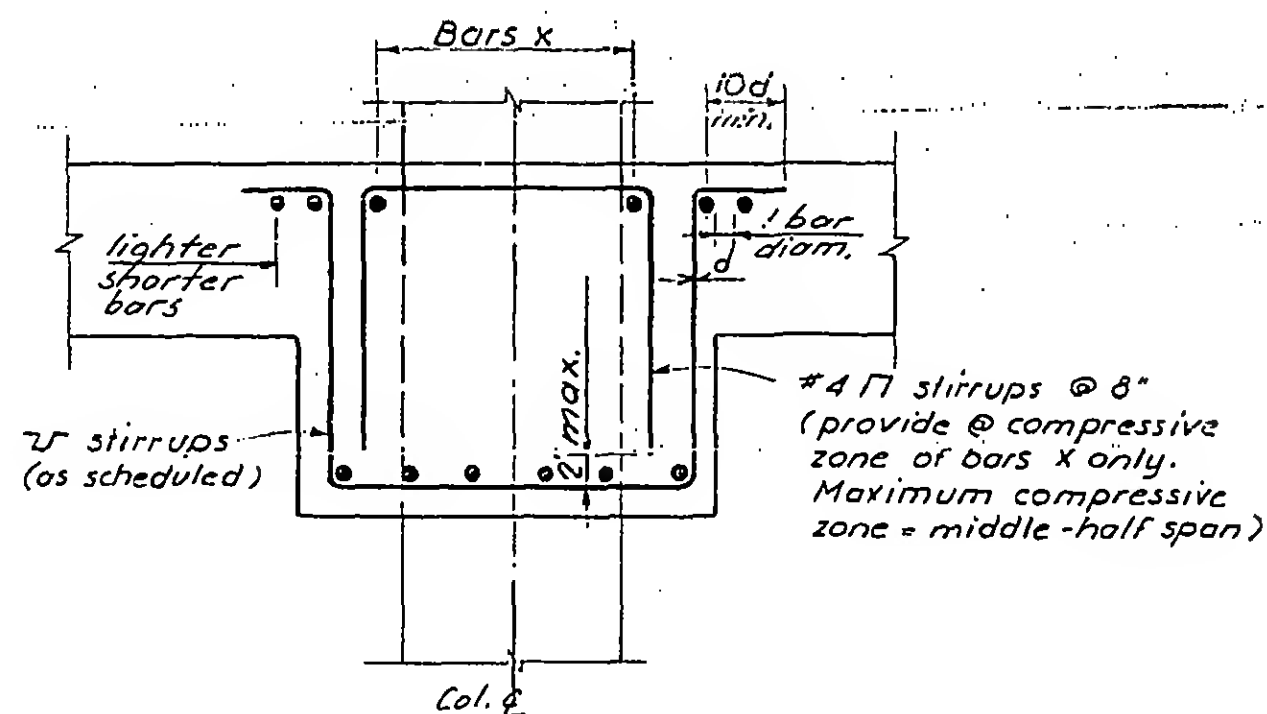
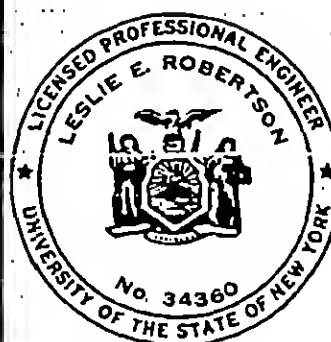
TITLE CONCRETE BEAM SECTIONS

DATE 12-18-68

REVISIONS



Typical Section A-A

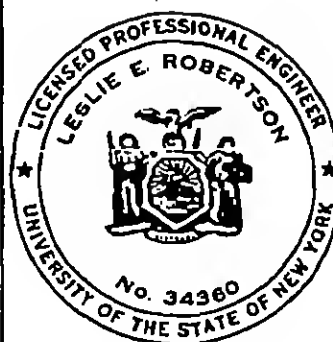
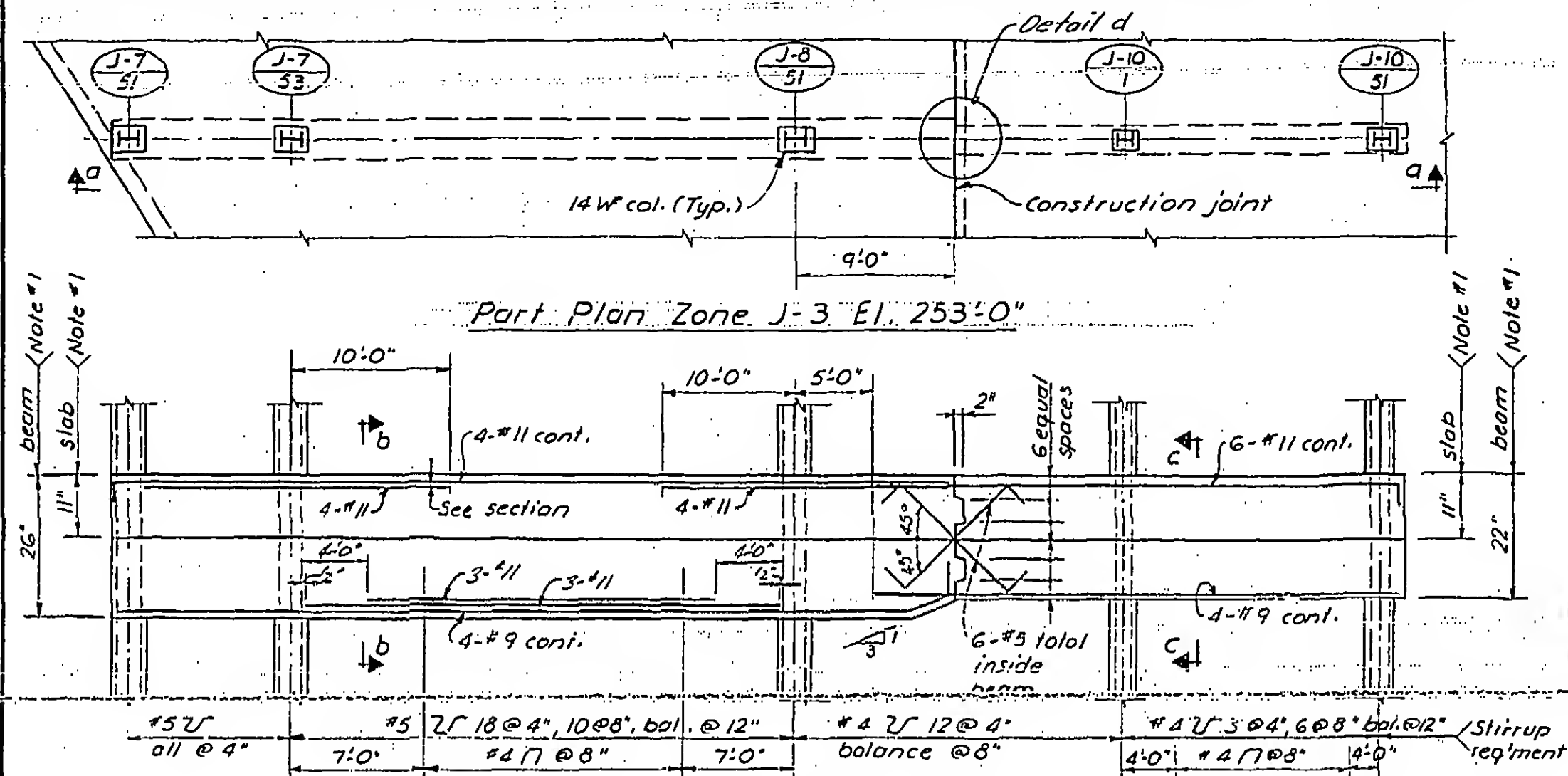
Section B-B
(4 bars "X" in compressive zone)Section C-C
(2 bars "X" in compressive zone)

DESIGNED

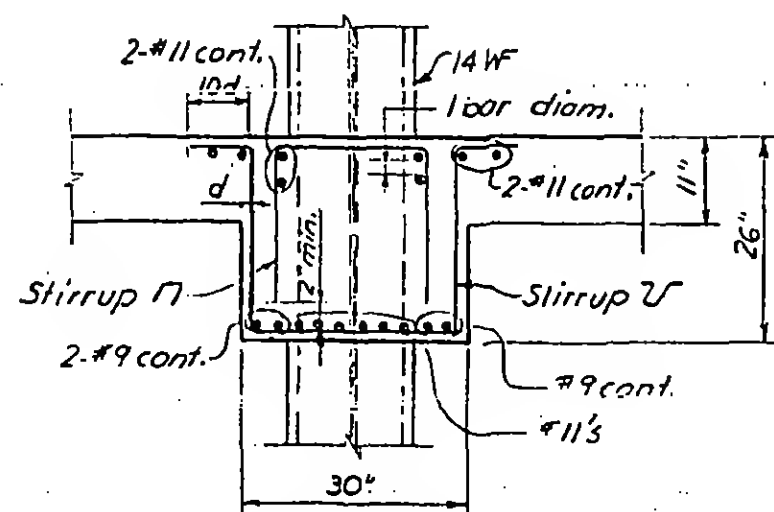
DRAWN
S.C.REVIEWED
J.M. & E.L.

8-JK8-42

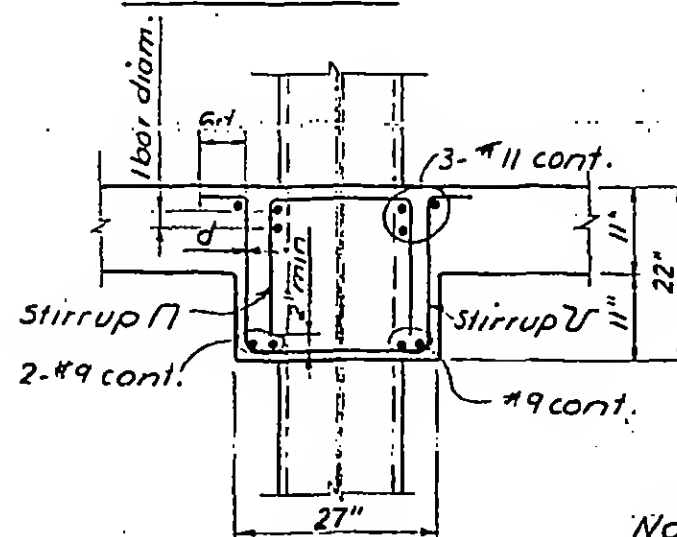
REVISIONS



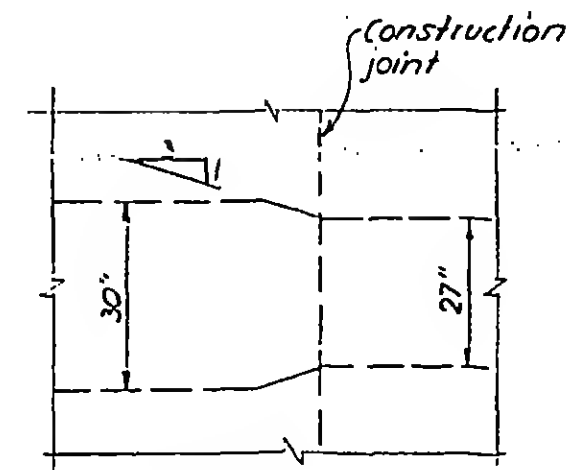
Section a-a



Section b-b



Section C-C



Detail d.

Notes:
1. Depth is exaggerated

8-JK8-43

DESIGNED

DEATH

REVIEWED
M. & E. L.

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

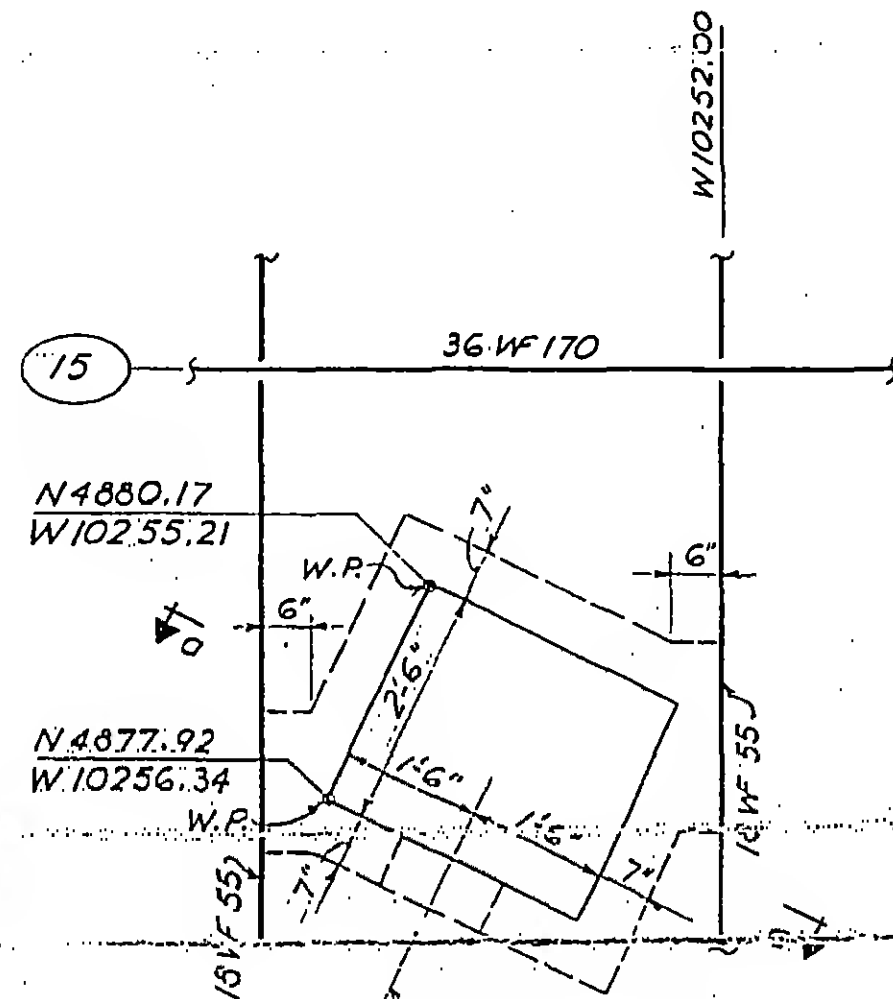
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE CATCH BASIN NO. 1

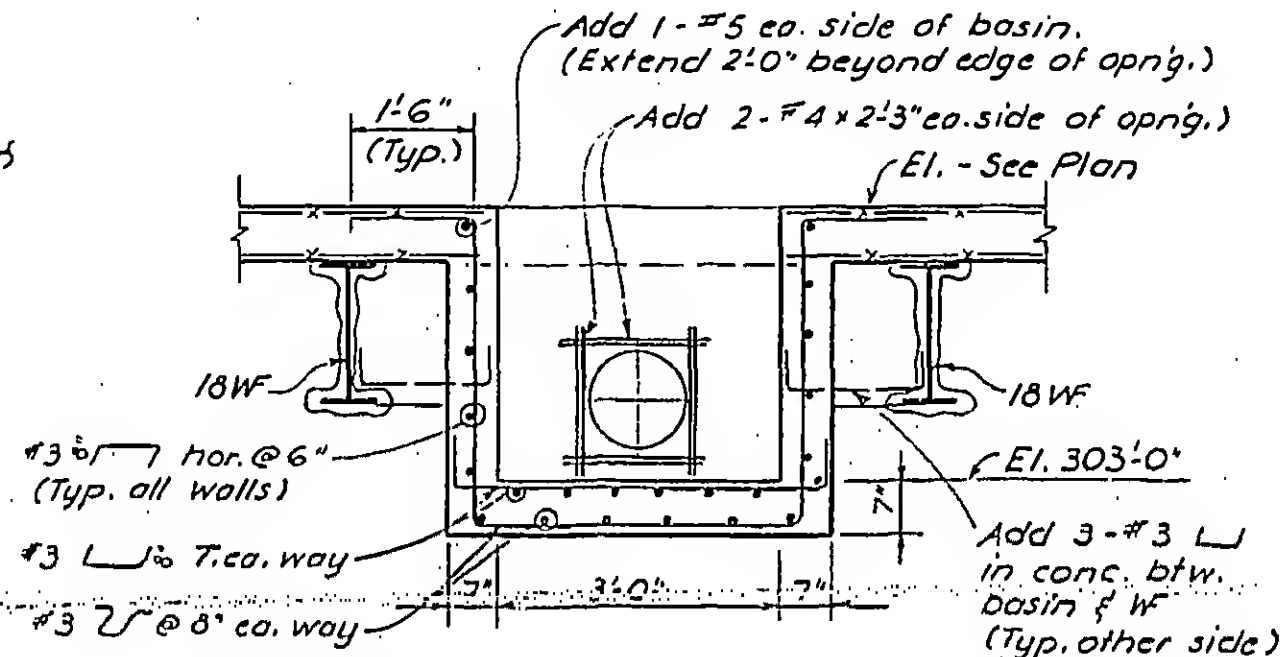
DATE 12-9-68

REVISIONS



Provide 14" φ pipe sleeve.
Inv. of sleeve at
El. 303'-11"
(See mech. dwg.
for exact detail)

Plan
(1/2" = 1'-0")



Section a-a
(1/2" = 1'-0")



DESIGNED

DRAWN

REVIEWED

8-JKB-44

SKILLING, HELLE. CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

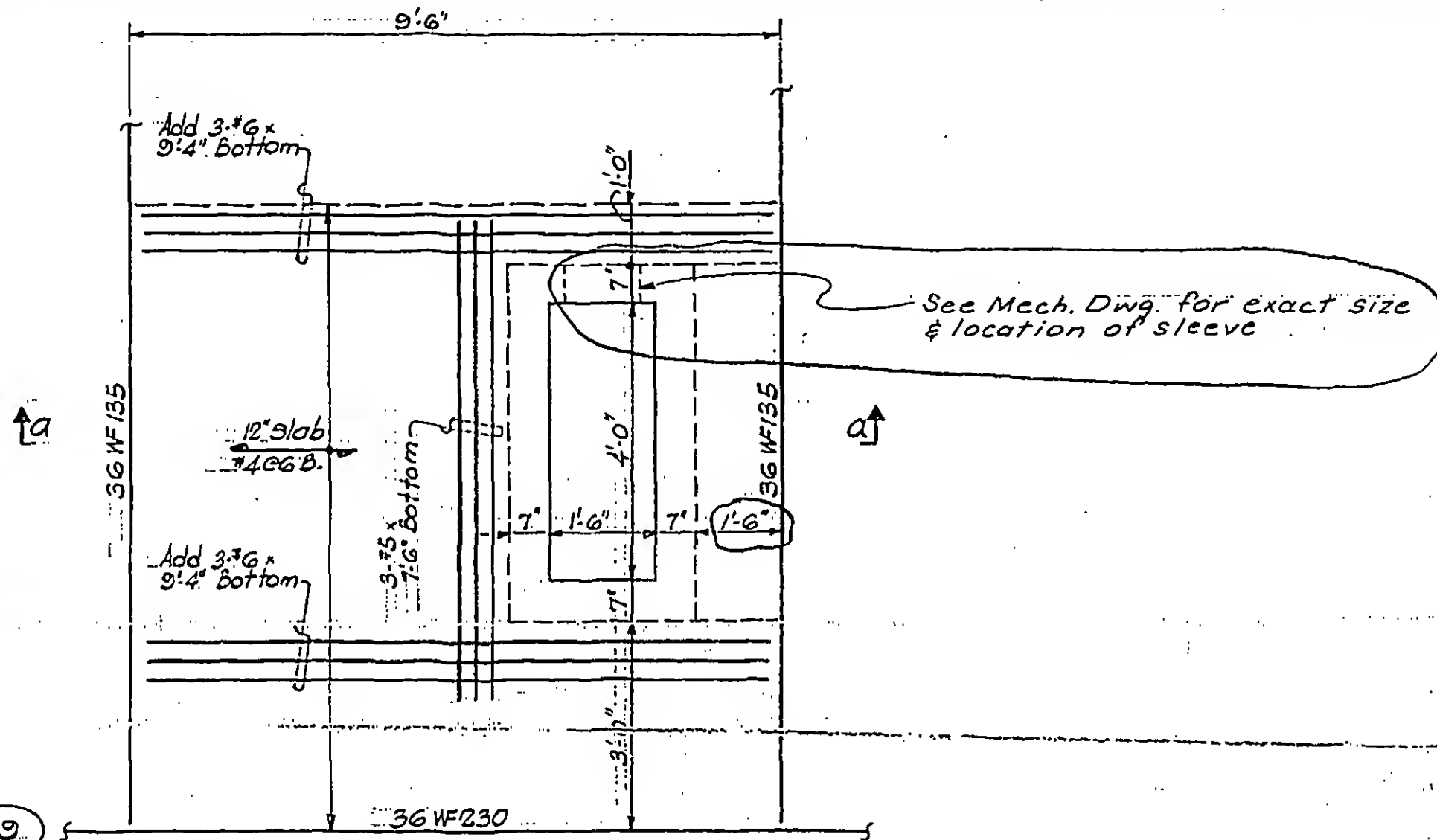
PROJECT THE WORLD TRADE CENTER

TITLE CATCH BASIN NO. 2

DATE 13-9-68

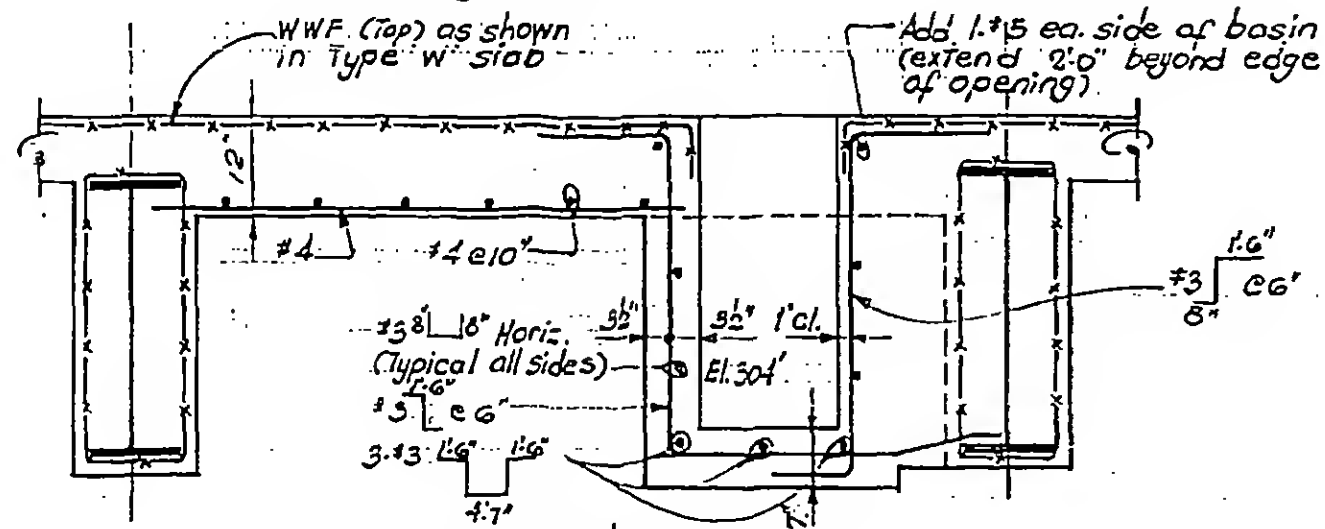
REVISIONS

1-27-69



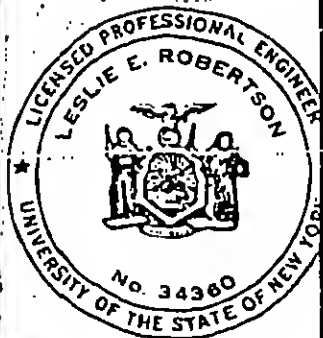
PLAN

(12'-0" x 9'-6")



Section a-a

(12'-0" x 9'-6")



DESIGNED

DRAWN

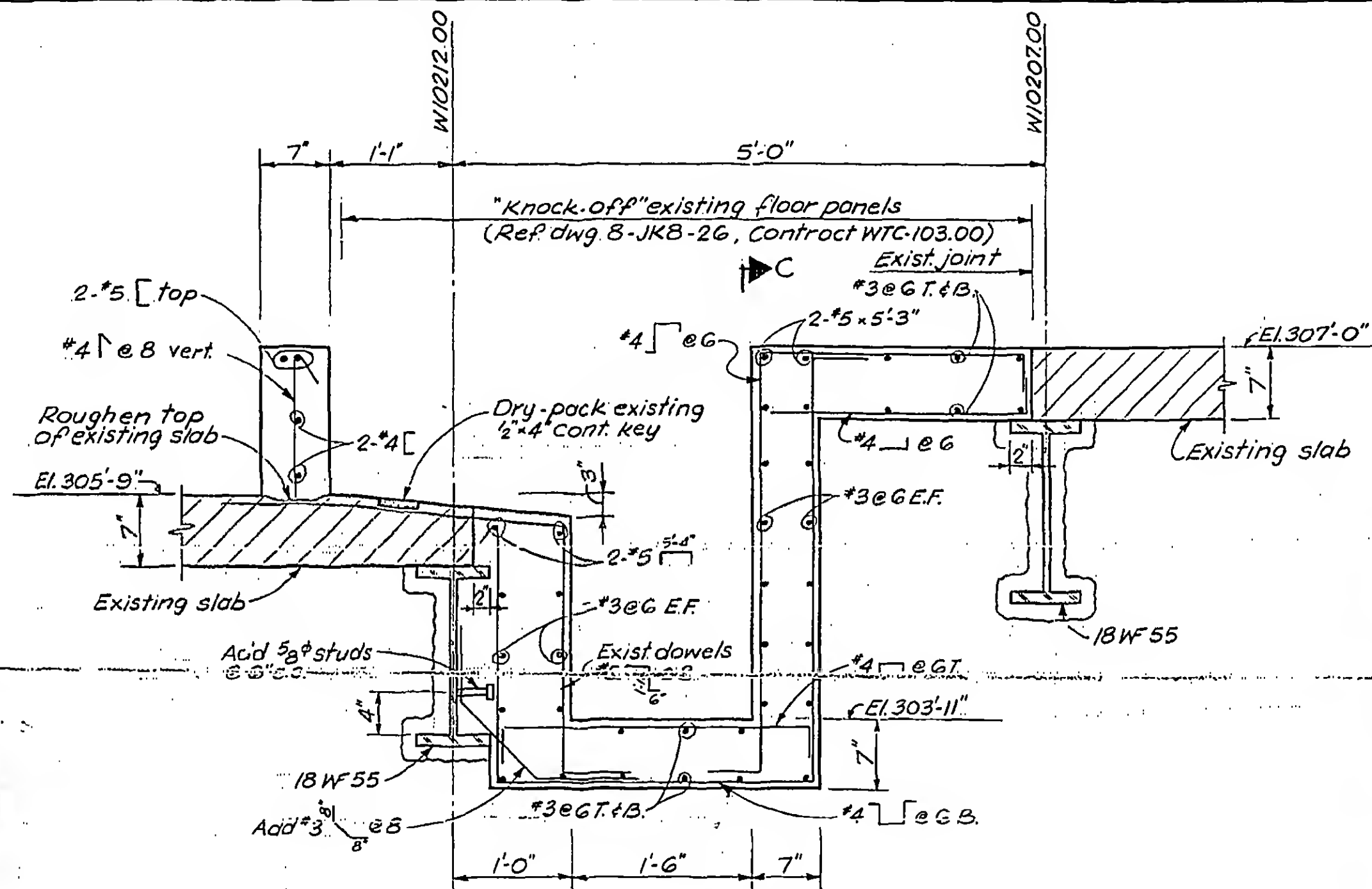
S.C.

REVIEWED

E.L.

8-JK8-45

REVISIONS



Section A-A
(1" = 1'-0")



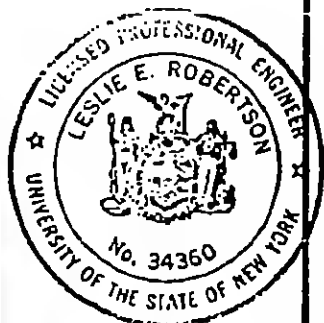
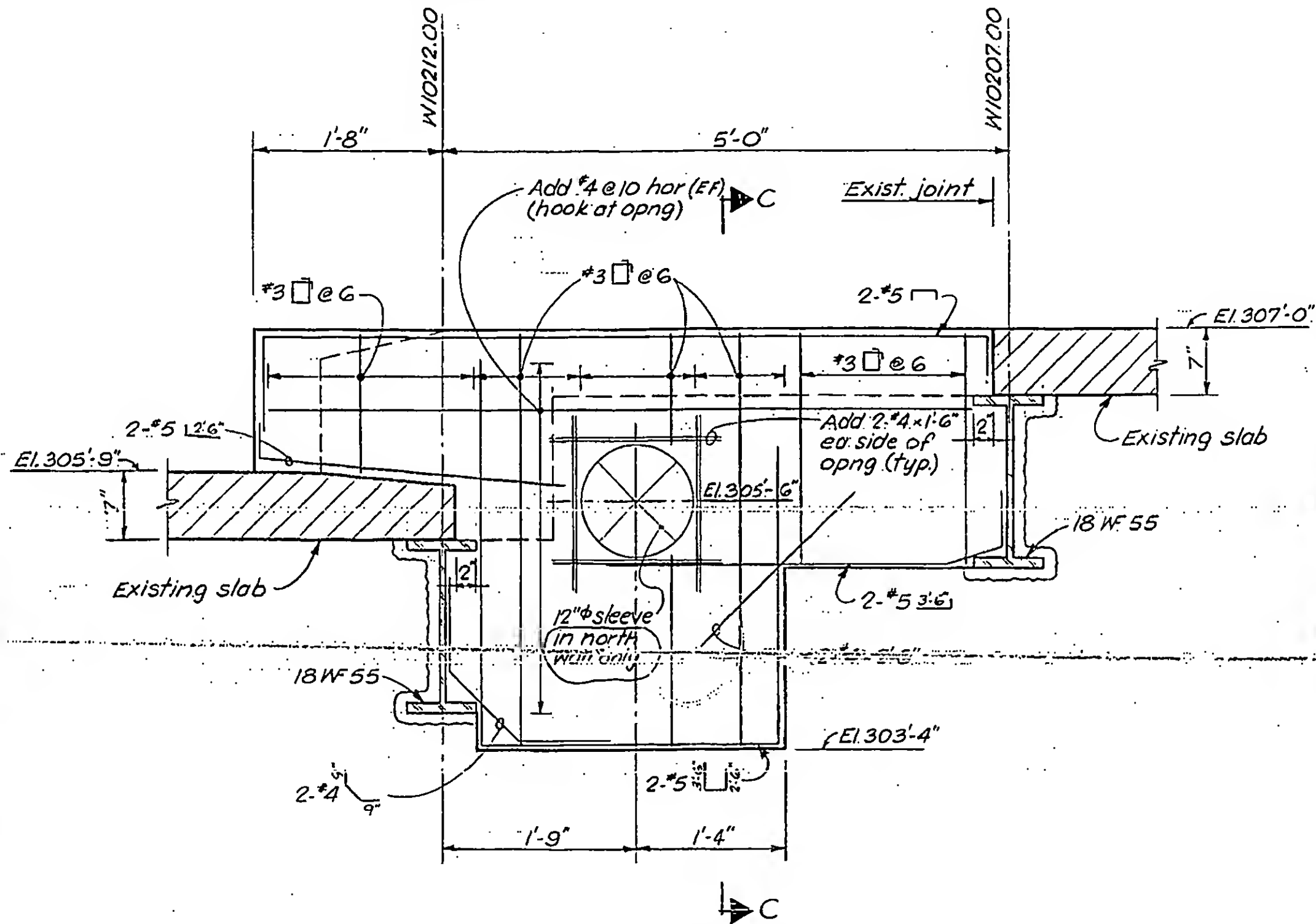
DESIGNED

DRAWN
S.C.

REVIEWED
E.L.

8-JK8-45.1

| |
|-----------|
| REVISIONS |
| 7-13-70 |



| |
|------------------|
| DESIGNED |
| DRAWN S.C. |
| REVIEWED E.L. |

8-JK8-45.2

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE

CATCH BASIN No. 3

DATE 7-6-70

REVISIONS

23

N 4772.50

N 4767.00

N 4763.00

4'-10"

8"

4'-0"

8"

"Knock-off" existing floor panels
(Ref. dwg. 8-JKB-26, Contract WTC-103.00)

B

A

B (opp. hand)

Existing slab

Bend existing
dowels #5 @ 8"
to position as shown
(typ. other side)

#4 hor.

#4 hor.

Existing Slab

EI. 307'-0"

#3

#3

EI. 303'-11"

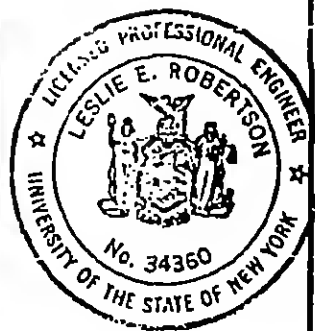
B

A

B (opp. hand)

Section C-C

(1" = 1'-0")



DESIGNED

DRAWN
S.C.

REVIEWED
E.L.

8-JKB-45.3

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

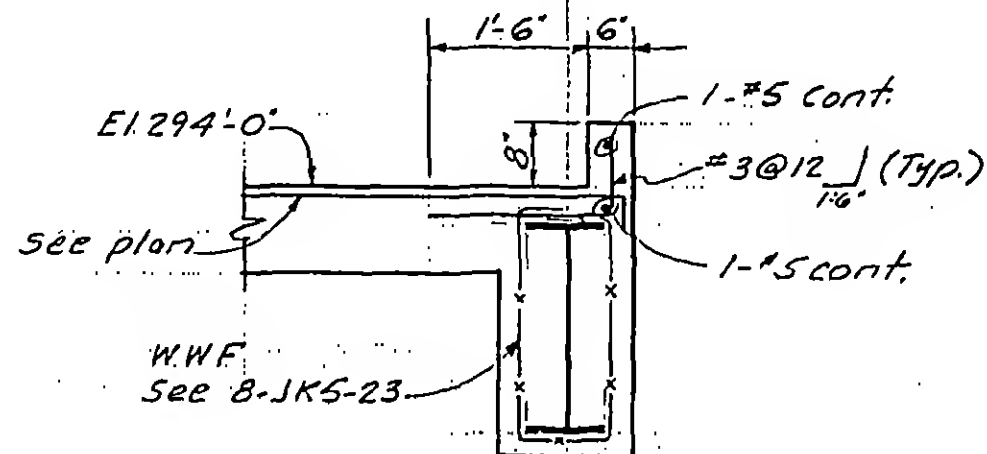
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE SECTIONS AT EL. 294'-0"

DATE 12-18-68

REVISIONS



Section A-A



DESIGNED

DRAWN

S.C.

REVIEWED

J.M.E.L.

8-JKB-46.1

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

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PROJECT THE WORLD TRADE CENTER

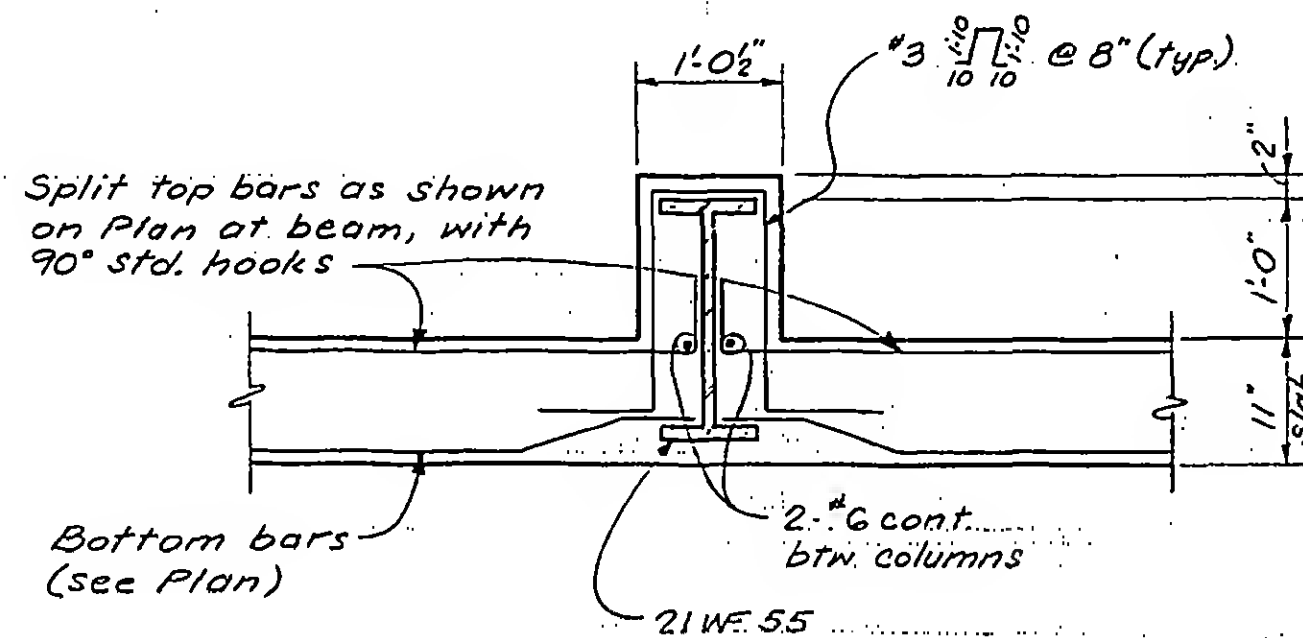
TITLE

SECTION AT EL. 294'-0"

DATE

2-20-69

REVISIONS

SECTION B-B

DESIGNED

DRAWN
S.C.REVIEWED
E.L.

8 JK8-462

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

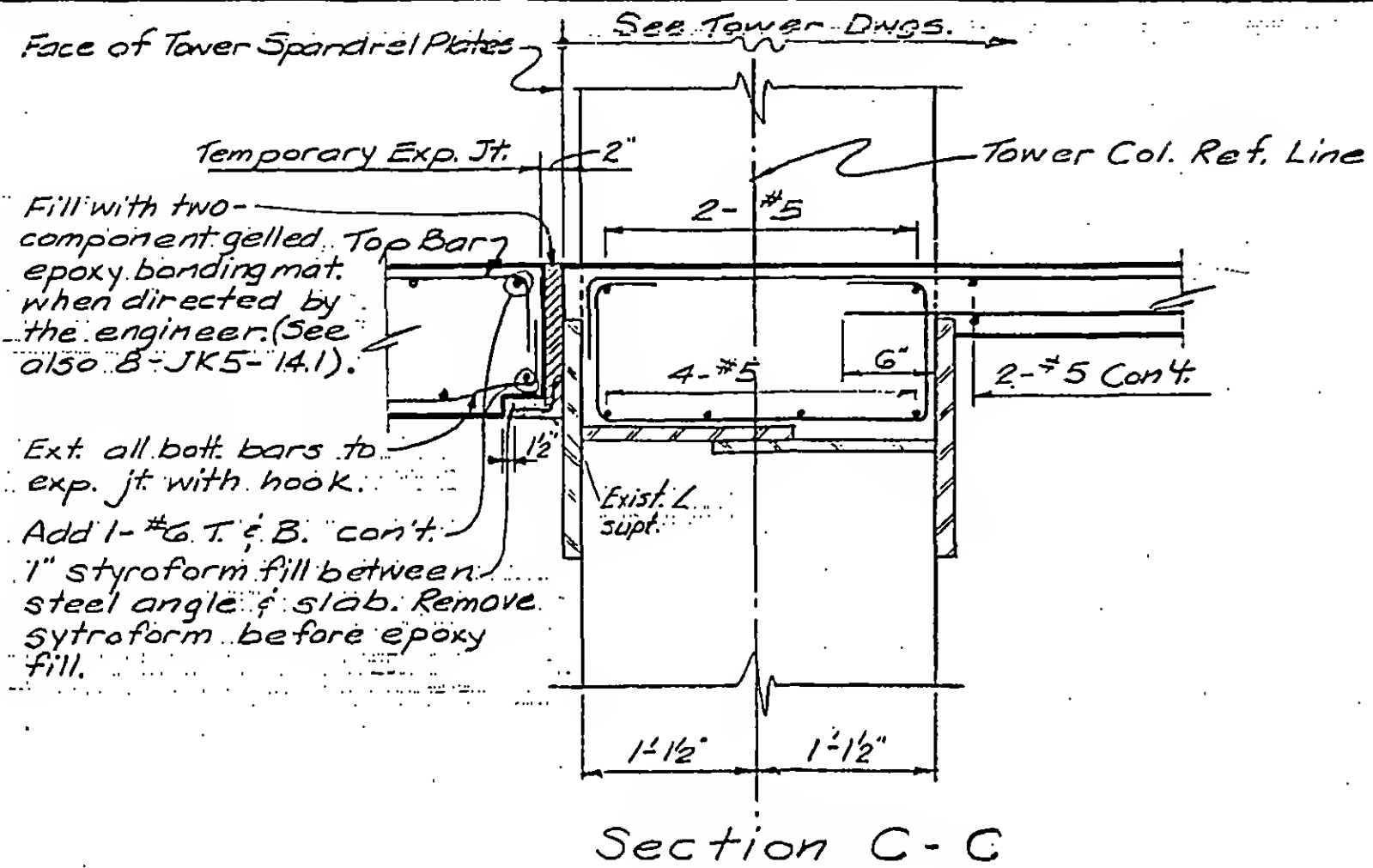
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE SECTION AT ELEV. 294'

DATE 4-2-69

REVISIONS

Notes:

1) See also B-JK5-14.1.



DESIGNED

DRAWN
G.S.REVIEWED
E.L.

B-JK8-46.3

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

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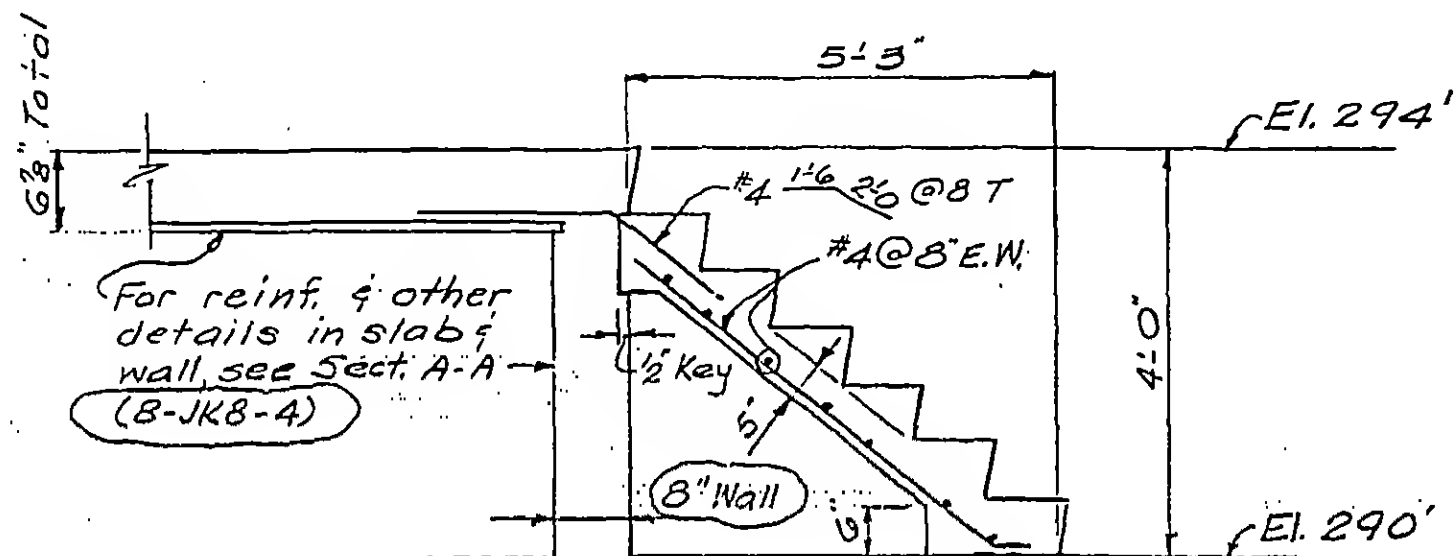
PROJECT THE WORLD TRADE CENTER

TITLE SECTION AT EL. 294'-0"

DATE 7-1-69

REVISIONS

7-23-69



Section D-D
(1/2" = 1'-0")



DESIGNED

DRAWN

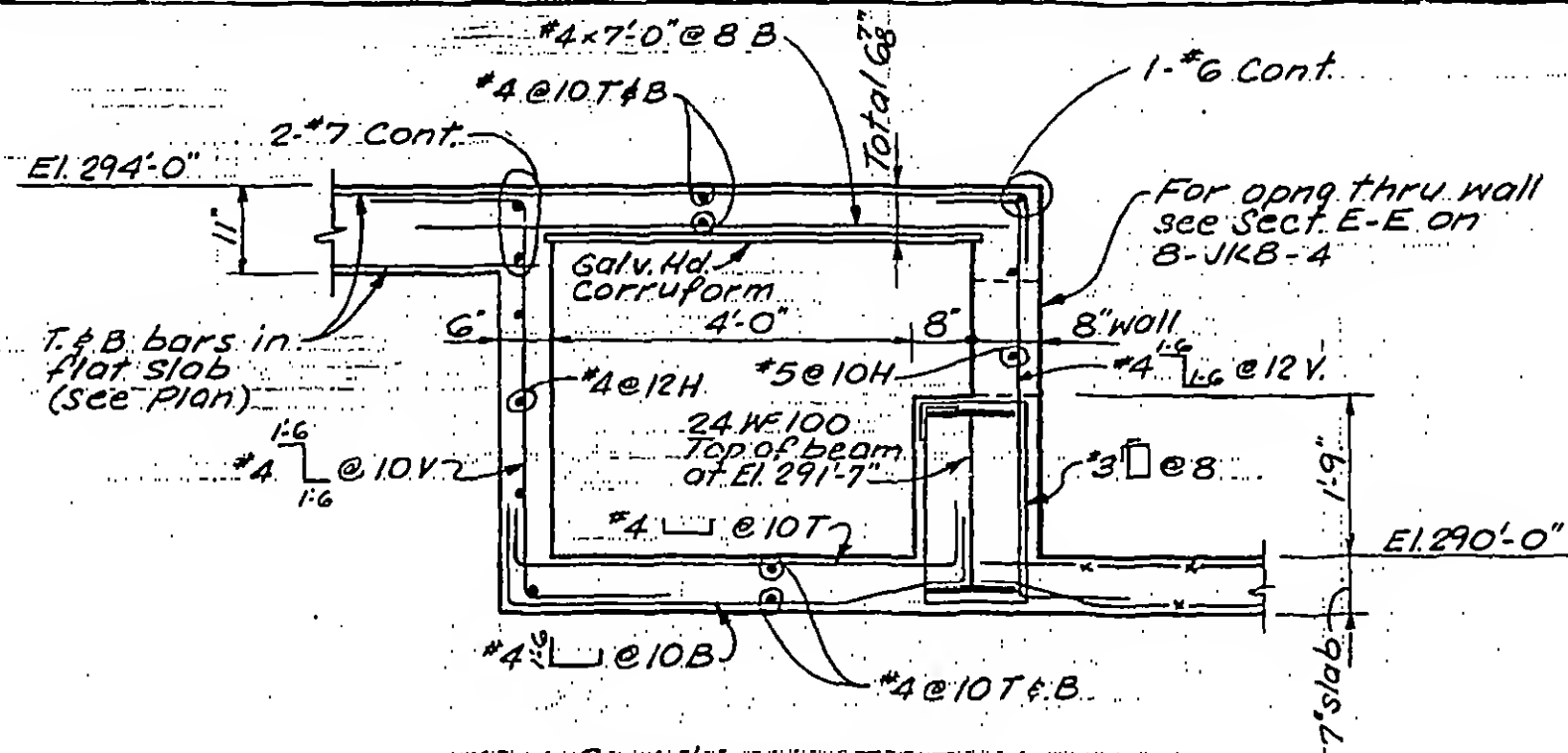
G. Stanton

REVIEWED

E.L.

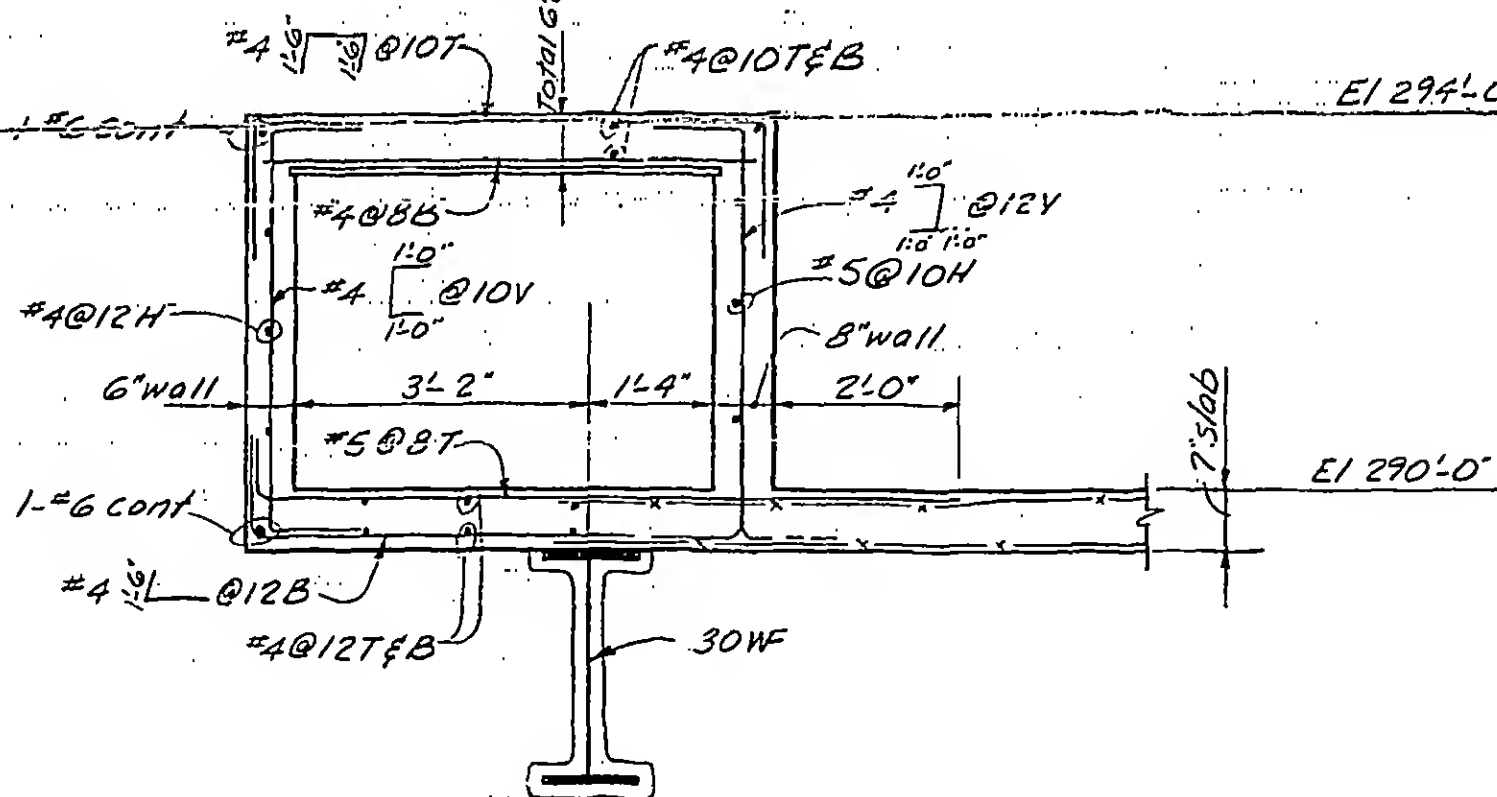
8-JK8-46.4

REVISIONS



Section E-E

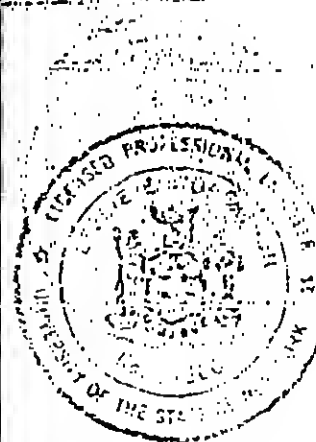
“(12" ± 10")



Section F-F

(1/2" = 1'-0")

8-JK8-46.5



DESIGNED

DRAWN

THE VIEW

51

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

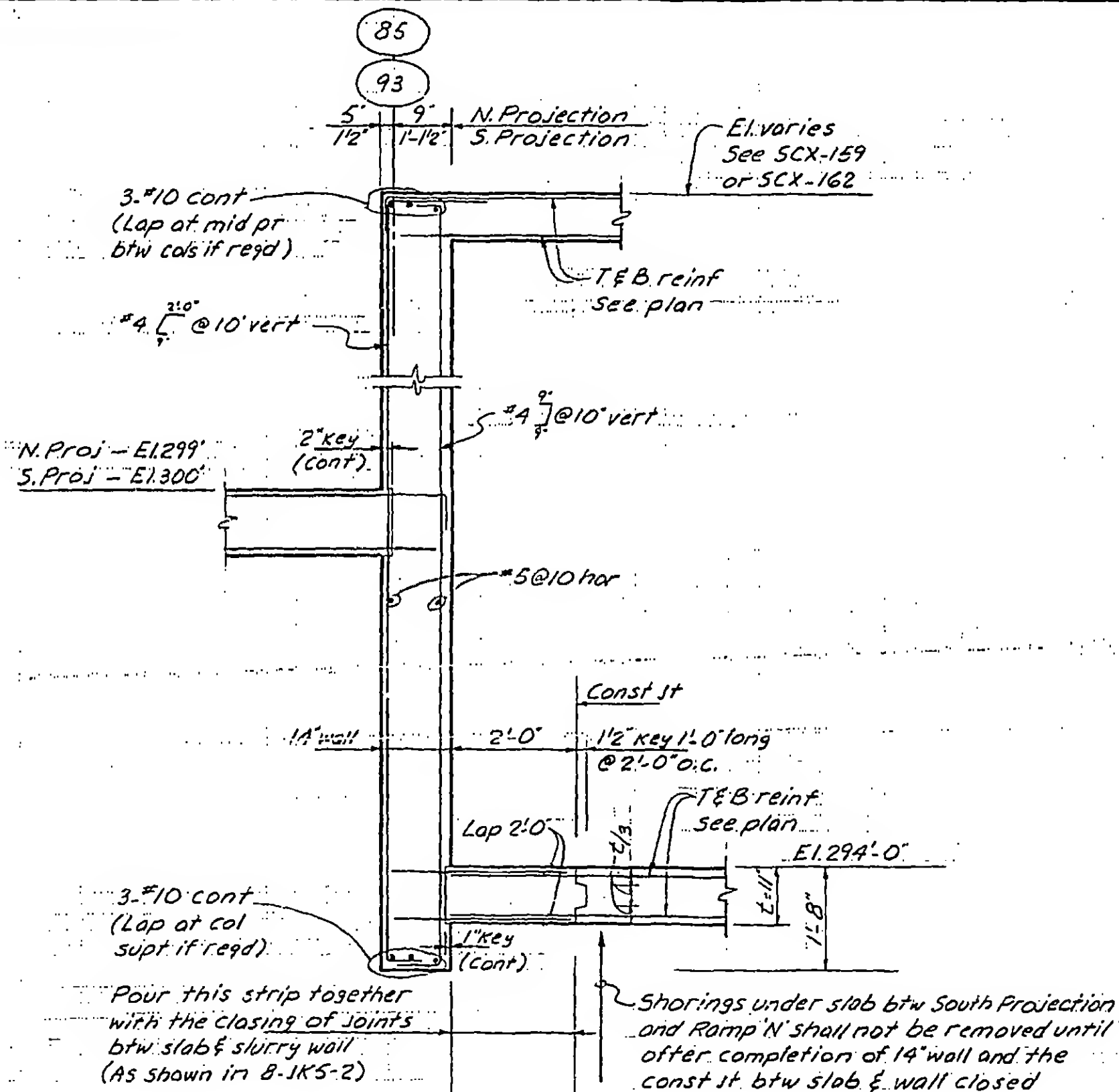
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE SECTION AT EL. 294'

DATE 9-3-69

REVISIONS

2-27-70 GEN.
REV.

DESIGNED

DRAWN
A.F.

REVIEWED

E.L.

B-1K8-46.6

SKILLING, HELLE. CHRISTIANSEN, ROBERTSON

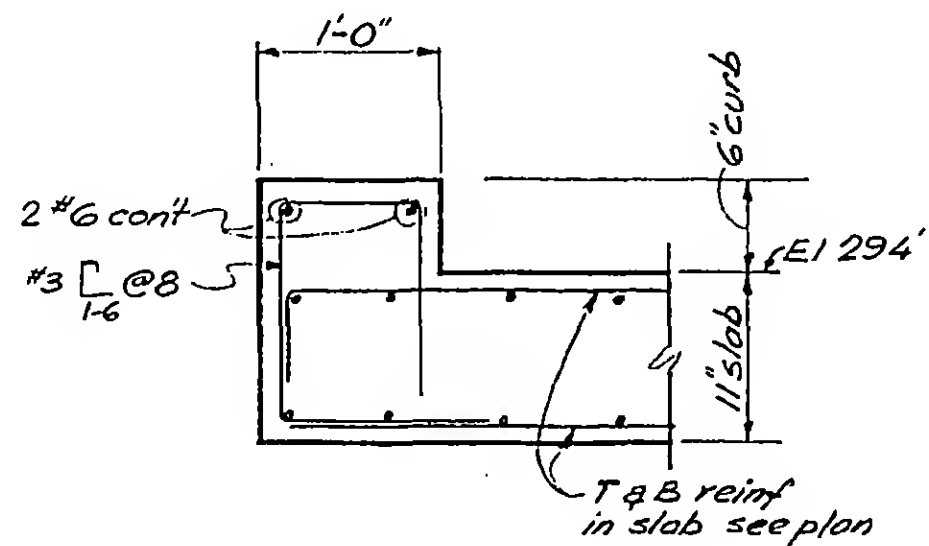
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

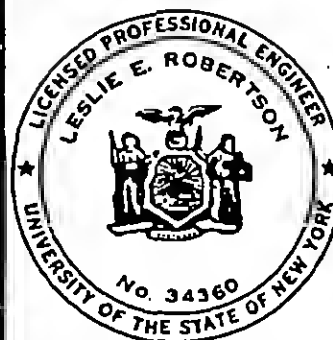
TITLE SECTION AT EL. 294

DATE 9-3-69

REVISIONS



Section H-H
(1' = 1'-0")



DESIGNED

DRAWN
J.G.REVIEWED
E.L.

8-JK8-46.7

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

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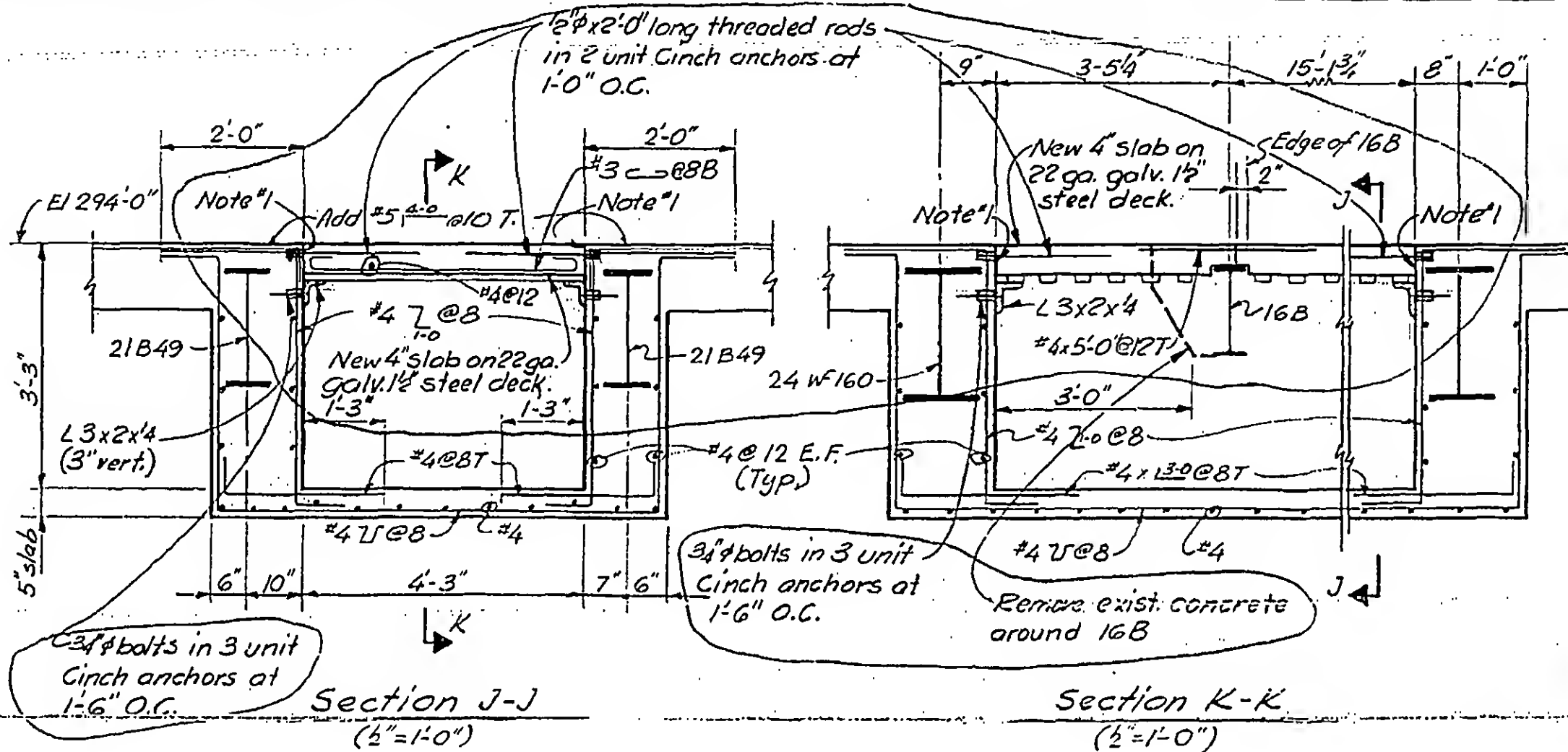
PROJECT THE WORLD TRADE CENTER

TITLE SECTIONS AT EL. 294

DATE 9-3-69

REVISIONS

10-29-71



DESIGNED

DRAWN
J.G.REVIEWED
E.L.

8-JK8-46.8

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

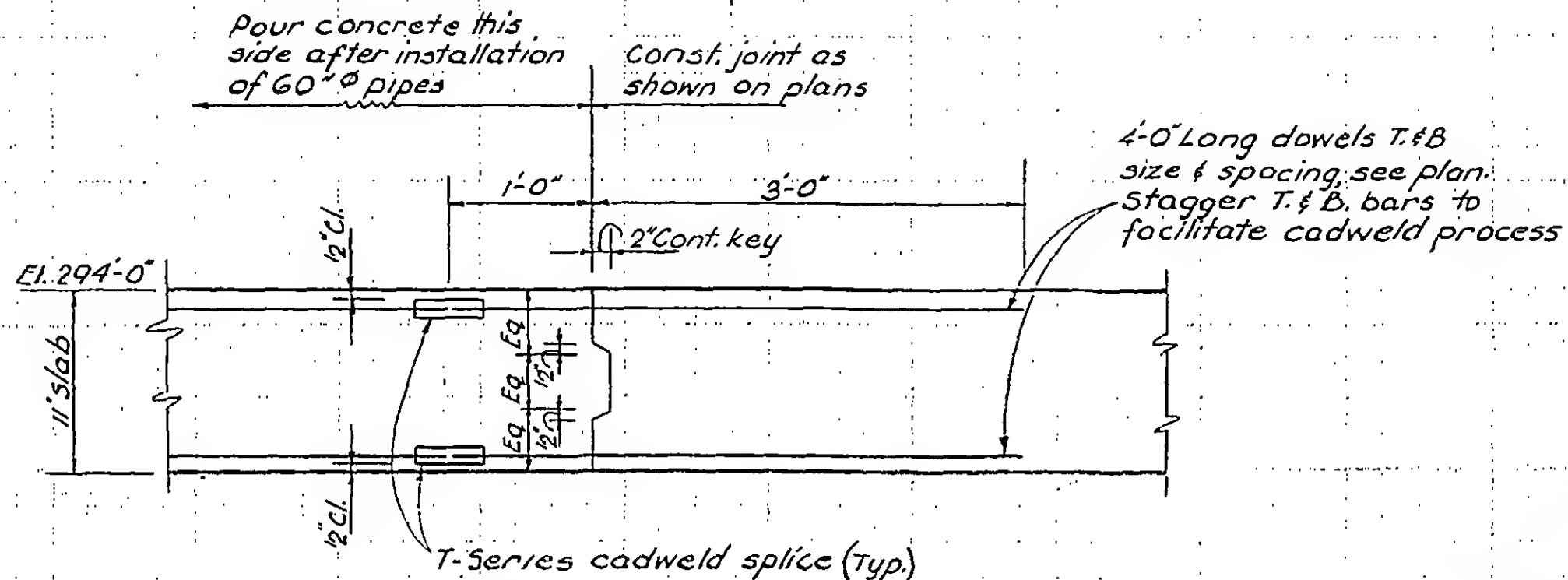
PROJECT THE WORLD TRADE CENTER

TITLE

SECTION AT EL. 294

DATE 11-7-69

REVISIONS



Section L-L
(1'-1'-0")



DESIGNED

DRAWN

D. Huggins

REVIEWED

E.L.

8-JK8-46.9

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

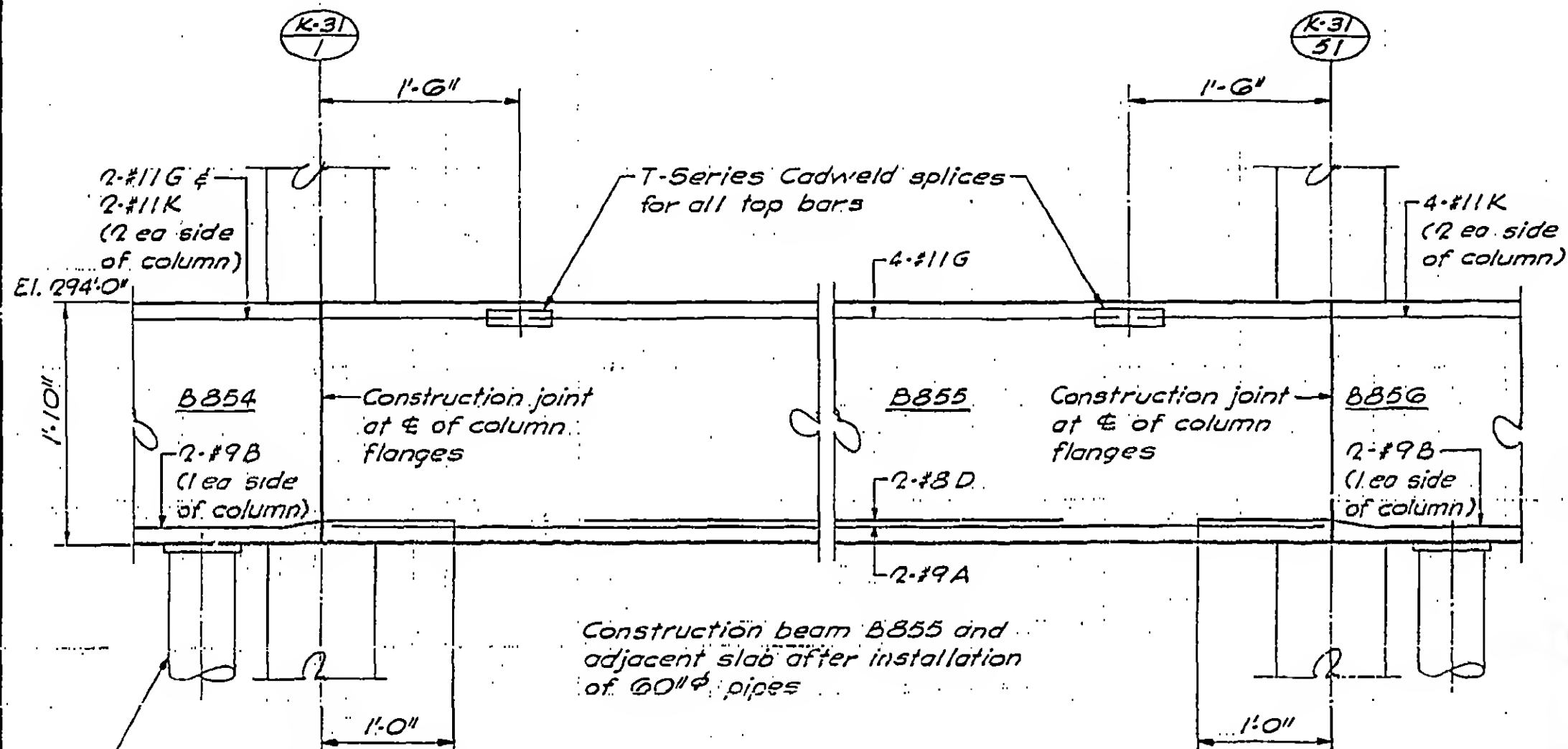
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE SECTION AT EL. 284'-0"

DATE 11-7-69

REVISIONS



Construction beam B855 and
adjacent slab after installation
of 60" pipes

Provide 1-6" standard pipe
support under B854. Pipe
sits on floor at el. 284'-0".
Place as close to column as
possible. (Typical under
B856 next to col K31-51).

SECTION M-M
(1" = 1'-0")

DESIGNED
E.L.DRAWN
G.K.

REVIEWED

8-JKB-46.10

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

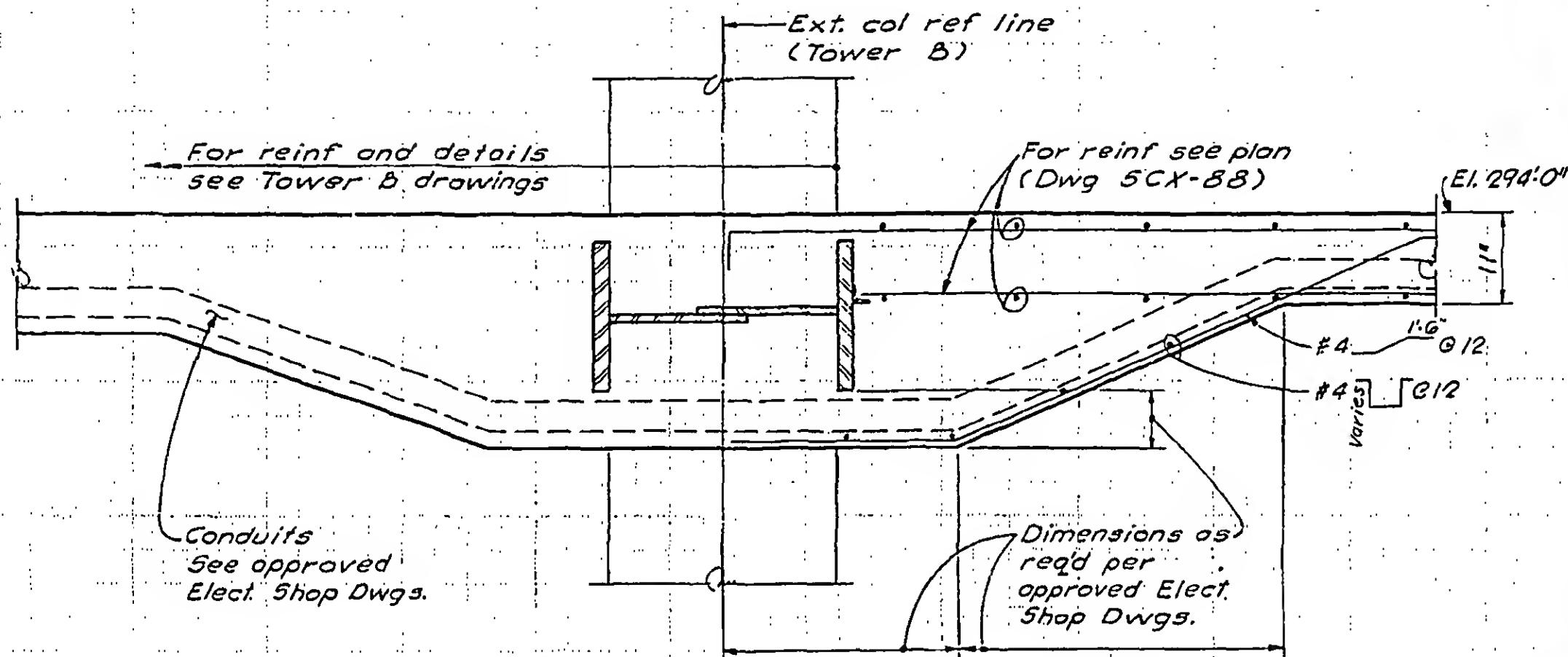
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE SECTION AT EL. 294'-0"

DATE 2-5-70

REVISIONS



SECTION N-N

 $(\frac{3}{4}" = 1'-0")$ 

DESIGNED

T.O.

DRAWN

G.K.

REVIEWED

E.L.

8-UKB-46.11

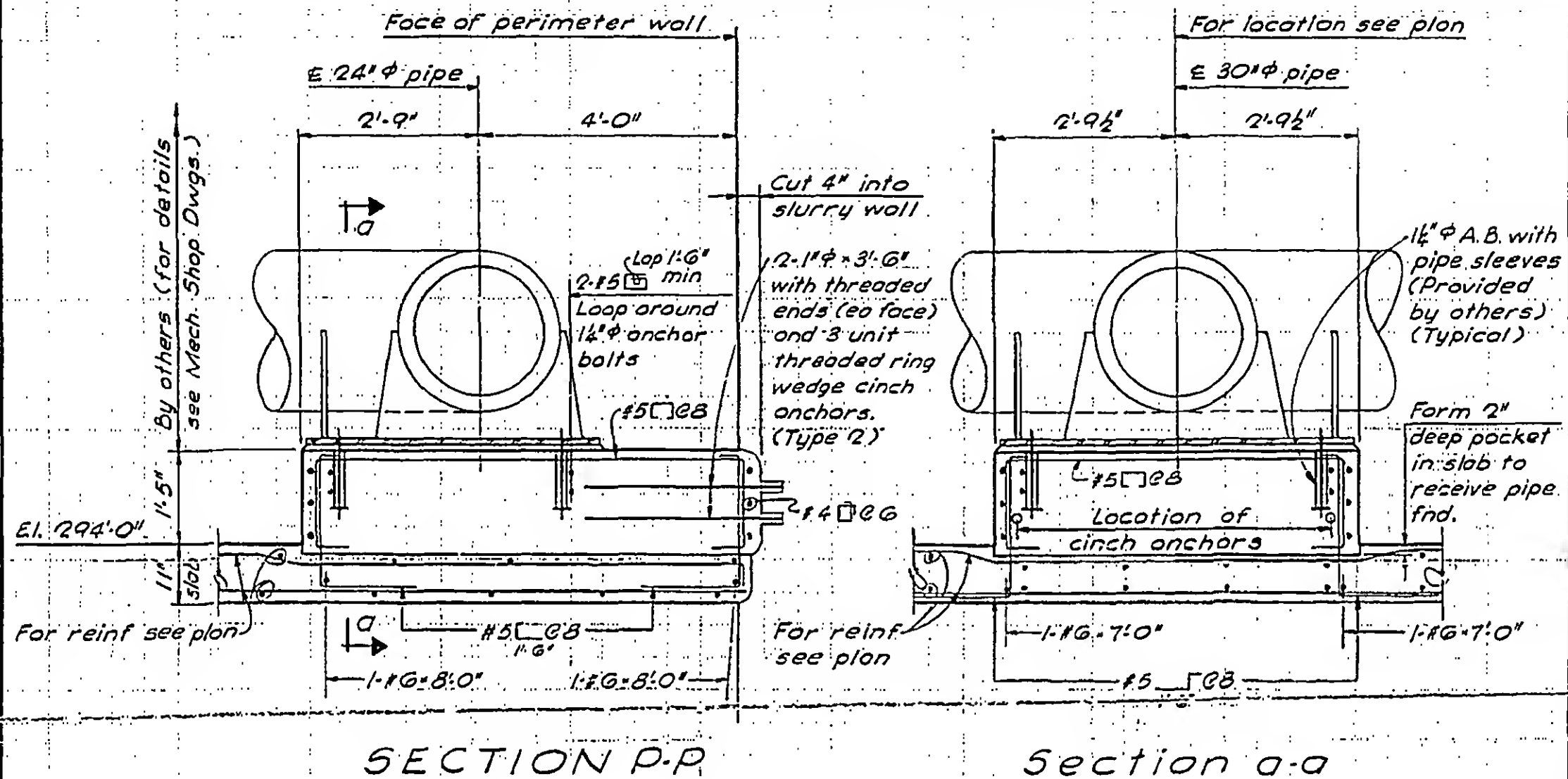
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE CONCRETE SUPPORT FOR 24" ϕ STEAM MAIN

DATE: 2-5-70

REVISIONS



SECTION P.P

Section a-a

NOTES:

1. See Mech. Shop Dwg. 57-121 (F & S Mfg. Corp.) for detail of pipe supporting assembly and A. bolts.
2. All concrete to be $f'_c = 3000$ psi.



DESIGNED
T. O.

DRAWN
G.K.

REVIEWED
E.L.

$$(\frac{1}{2}'' = 1'-0'')$$

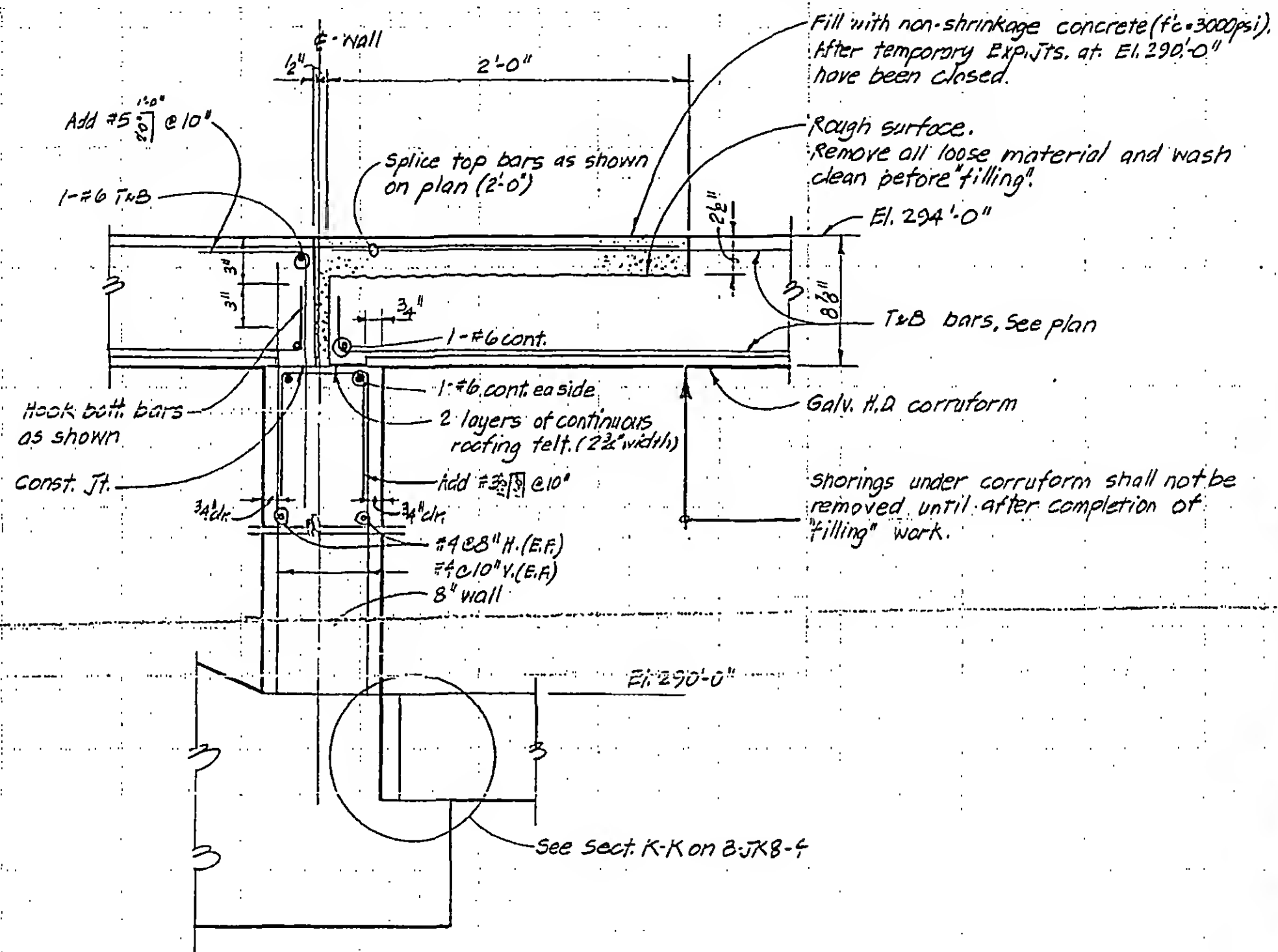
8-JK8-46.12

Structural & Civil Engineers

TITLE SECTION AT ELEVATION 294'-0"

DATE 3/30/70

REVISIONS



SECTION Q-Q

$$1\frac{1}{2}'' = 1'-0''$$


DESIGNED

DRAWN .
P. Ozeki

REVIEWED
E.L.

8-JK8-46:13

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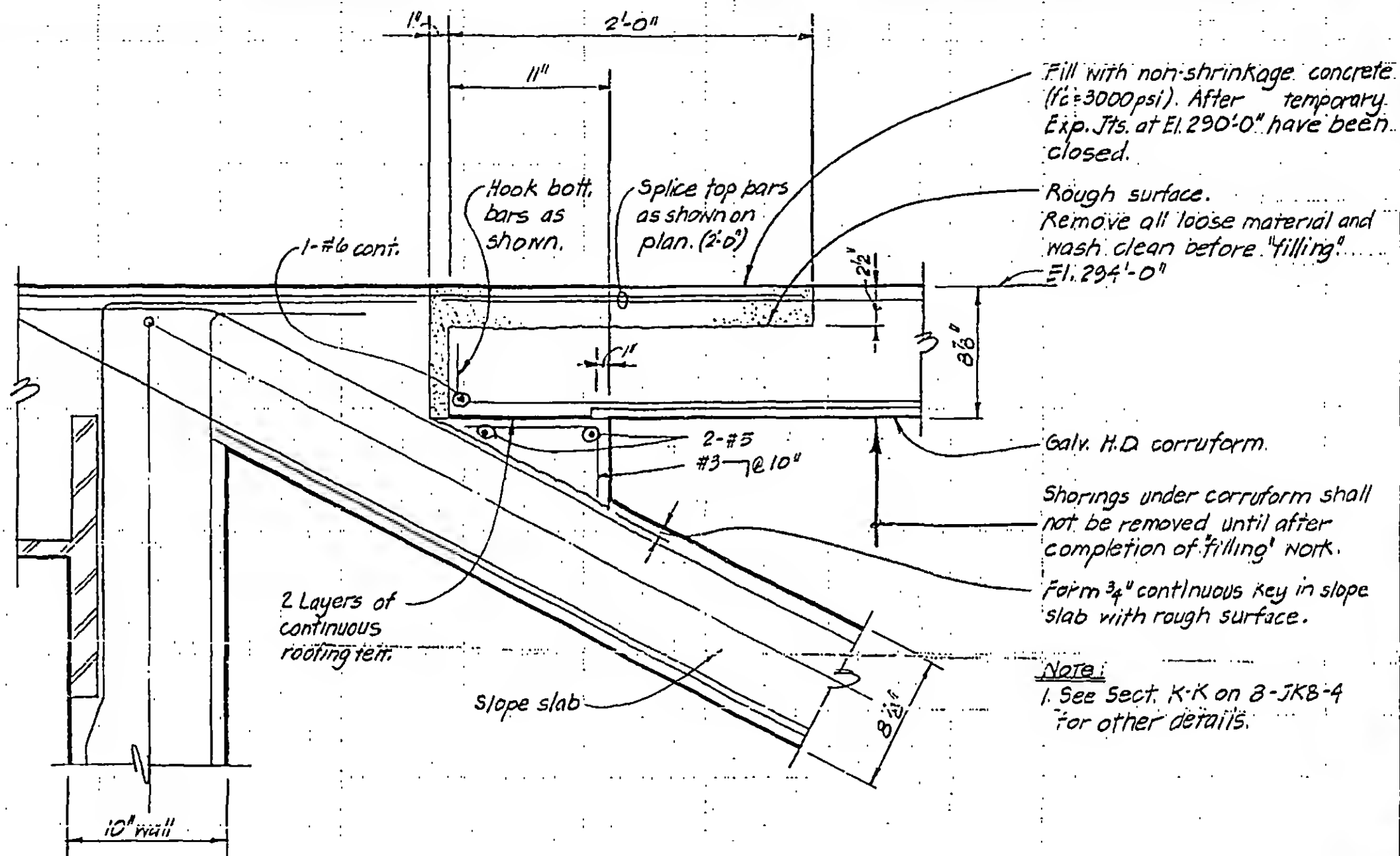
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE SECTION AT ELEVATION 294'-0"

DATE 3/30/70

REVISIONS

SECTION R-R
(1/2" = 1'-0")

DESIGNED

DRAWN
P.M. Ozeki

REVIEWED

E.L.

8-JK8-46.14

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

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PROJECT THE WORLD TRADE CENTER

TITLE

SECTIONS AT EL. 284'-0"

DATE 12-18-68

REVISIONS

4-21-69

Sawed joint. Approved
formed groove may be
substitutedKey & dowels
by others

Ramp (by others)

Slurry wall
by others
See PNYA
Dwgs.Const. Jt.
sim. to detail
on 8-JK5-218'-5" for Ramp A
16'-8" for Ramp B
12'-0" for Ramp C & DEl. 285'-1 1/4" for Ramp A
El. 285'-0" for Ramp B
El. 284'-8 3/4" for Ramp C
El. 284'-5 1/2" for Ramp D

Joint sealant

#4@12 each way

El. 284'-0"

For reinf.
See plan

Section A-A

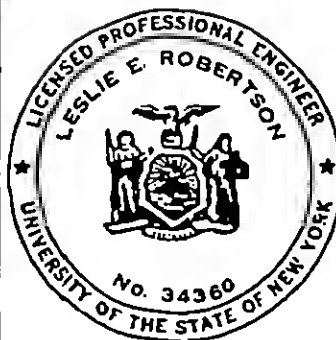
El. 284'-0"

2-#4 cont.

For reinf.
See plan

#3@12 2'-0" (Typ.)

Section B-B



DESIGNED

DRAWN

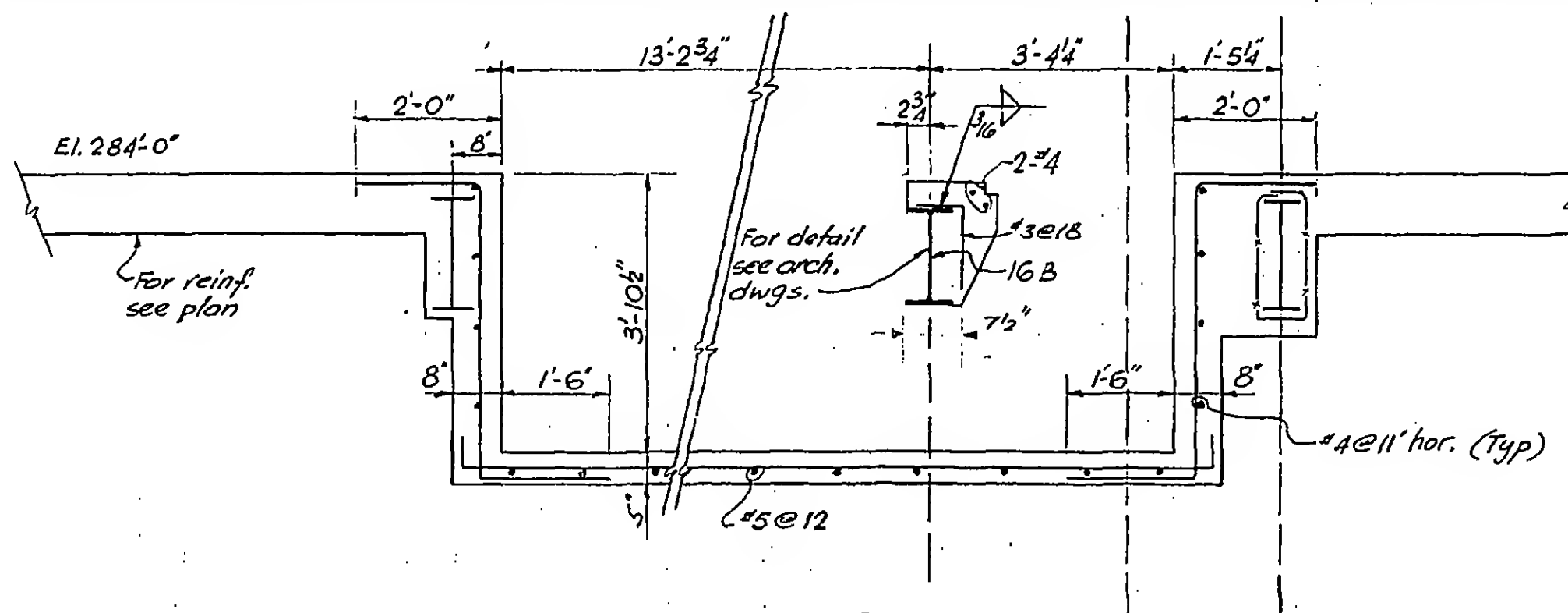
S.C.

REVIEWED

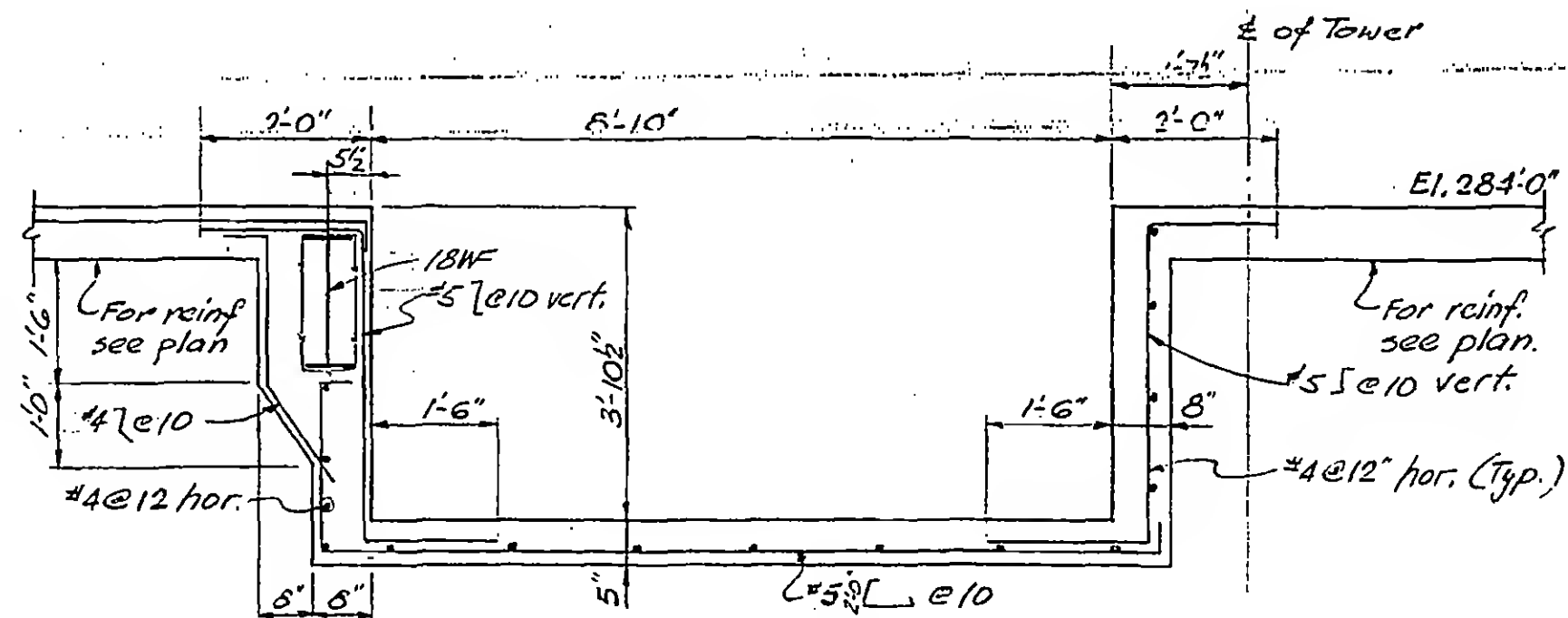
J.M. & E.L.

8-JK8-47.1

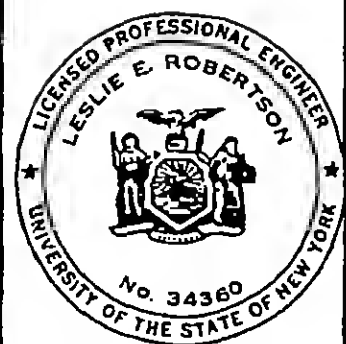
REVISIONS



Section D-D



Section E-E



DESIGNED

DRAWN

REVIEWED

J.M. & E.L.

8-JK8-47.2"

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

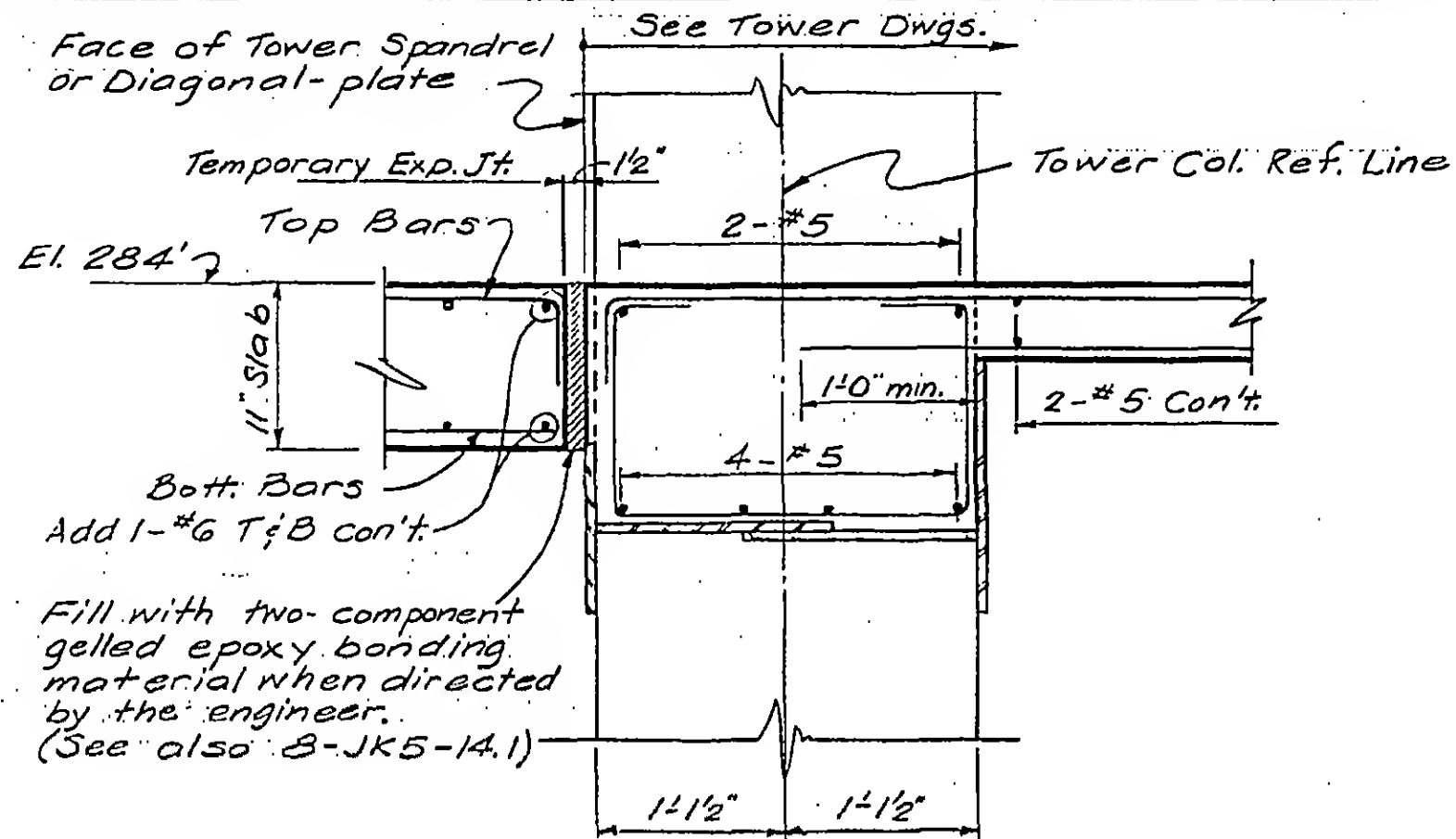
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE SECTION AT ELEV. 284'

DATE 4-2-69

REVISIONS



Fill with two-component
gelled epoxy bonding
material when directed
by the engineer.
(See also 8-JK5-14.1)

Section F-F

(SCJ-68)

Notes:

1) See also 8-JK5-14.1.



DESIGNED

DRAWN

G.S.

REVIEWED

E.L.

8-JK8-47.5

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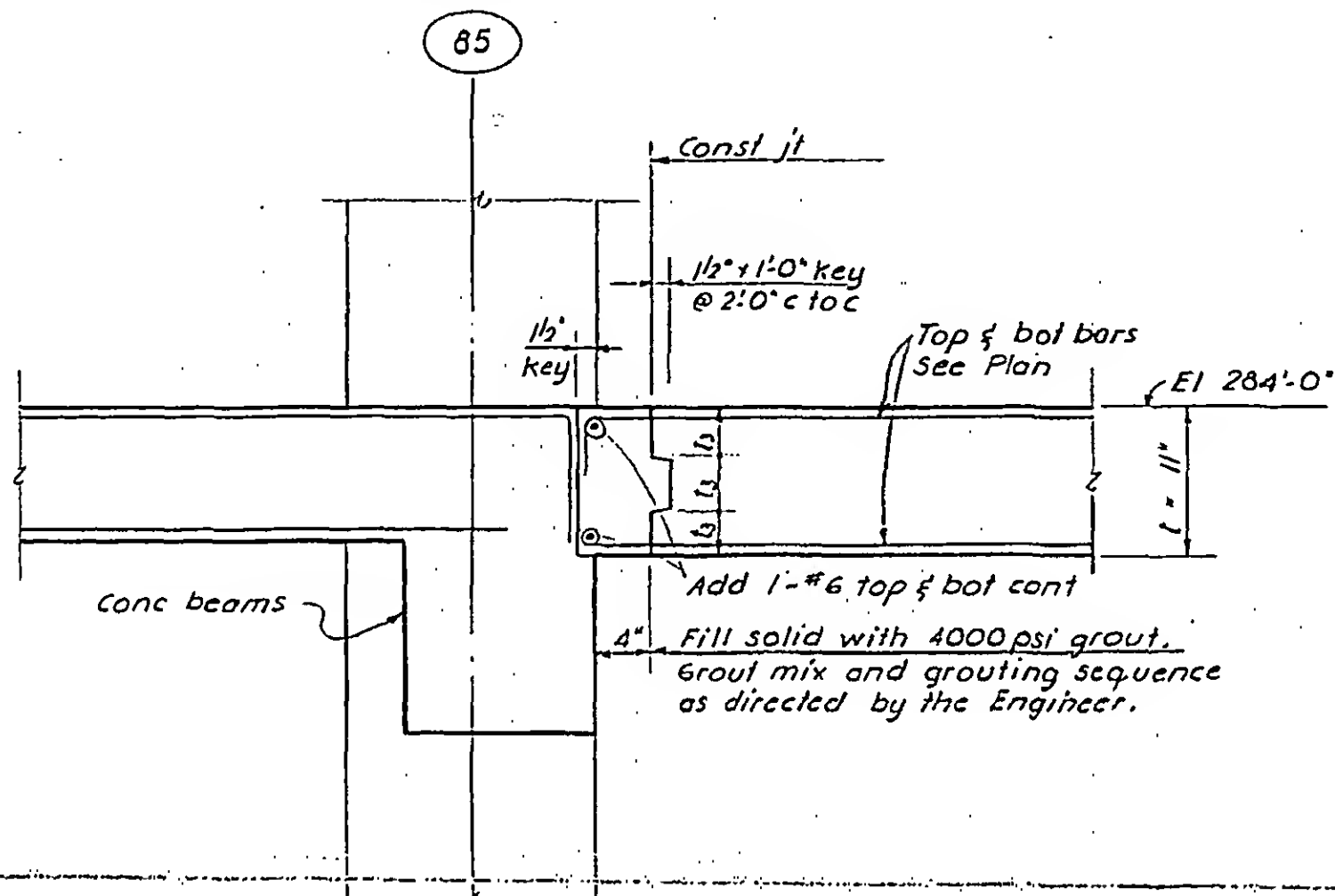
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

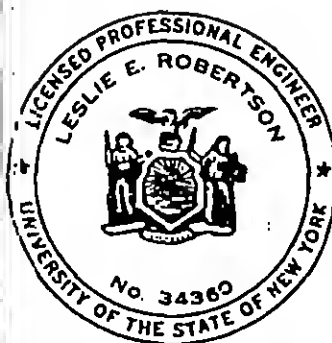
TITLE SECTION AT EL 284'-0"

DATE 4-21-69

REVISIONS



Section 6-6



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DRAWN F. Smith

REVIEWED

E.L.

8-JK8-47.4

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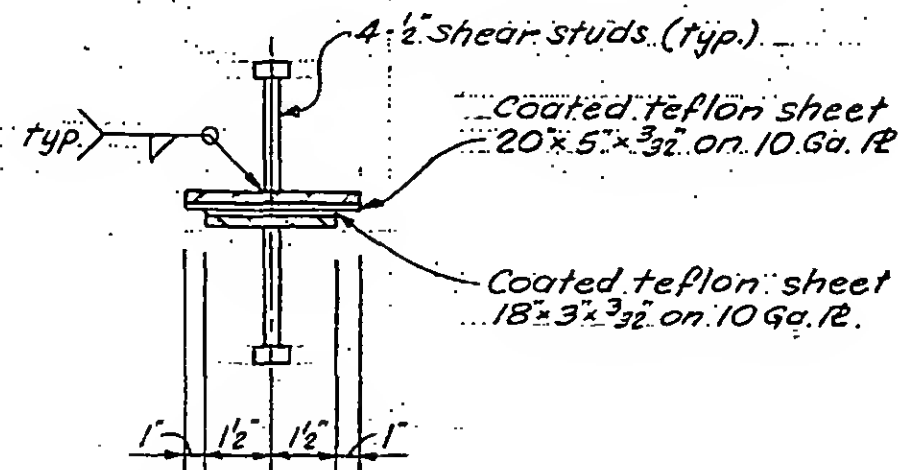
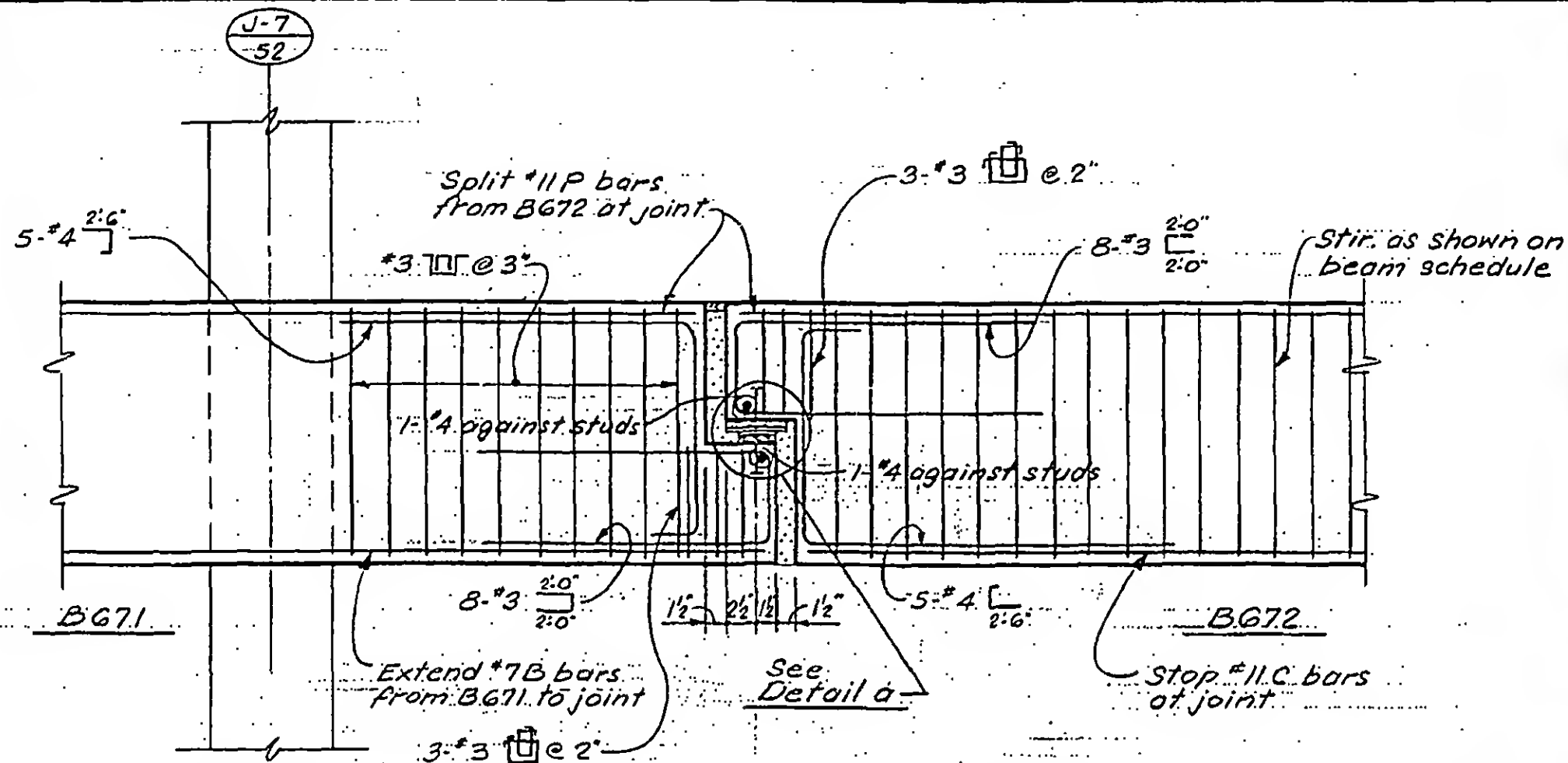
PROJECT THE WORLD TRADE CENTER

TITLE

SECTIONS AT EL. 284'

DATE 5-16-69

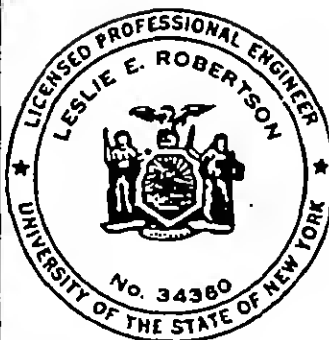
REVISIONS



Detail-a

Note:

See notes on 8-JK5-14.1



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S.C.REVIEWED
E.L.

8-JK8-47.5

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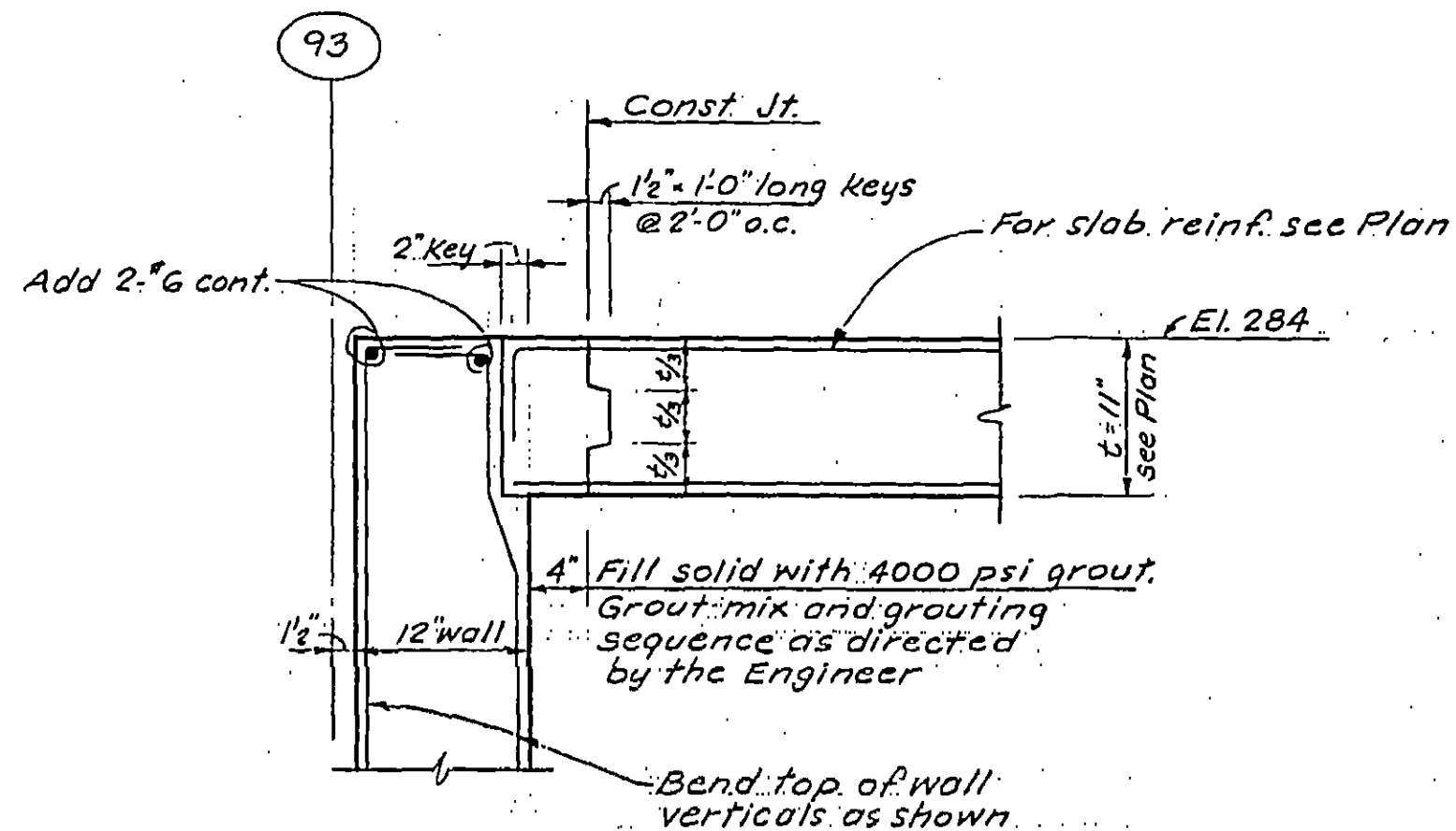
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE SECTION AT EL. 284'-0"

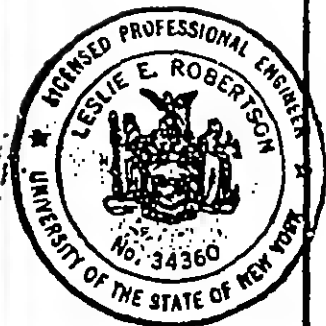
DATE 8-29-69

REVISIONS



Section H-H
(1" = 1'-0")

Note:
See 8-JK6-2.3 for connection detail
between C.I.P. wall & slurry wall.



DESIGNED

TRANSM
S.C.REVIEWED
E.L.

8-JK8-47.6

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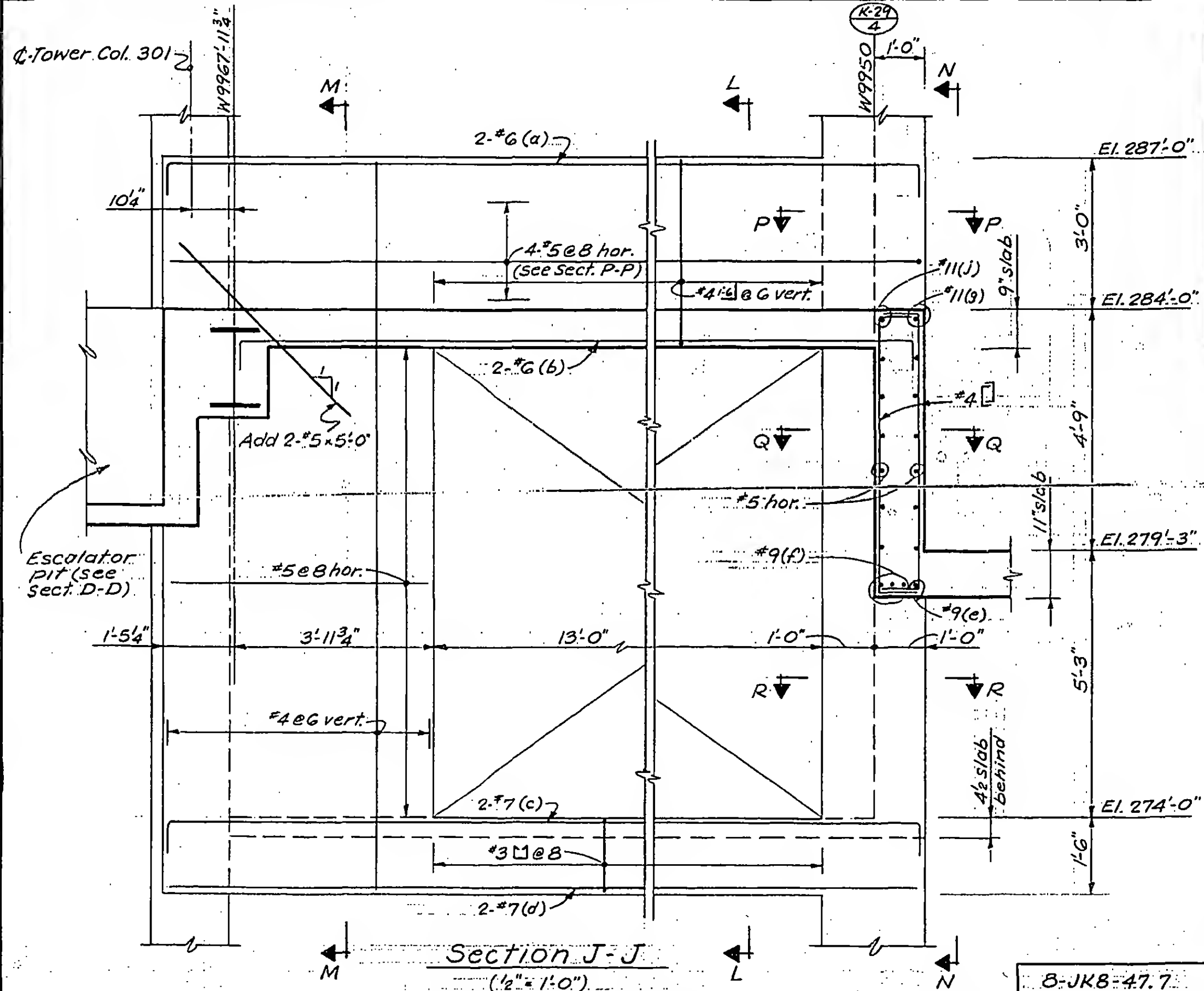
PROJECT THE WORLD TRADE CENTER

TITLE

SECTION AT EL. 284'-0"

DATE 8-29-69

REVISIONS



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DRAWN
S.C.REVIEWED
E.L.

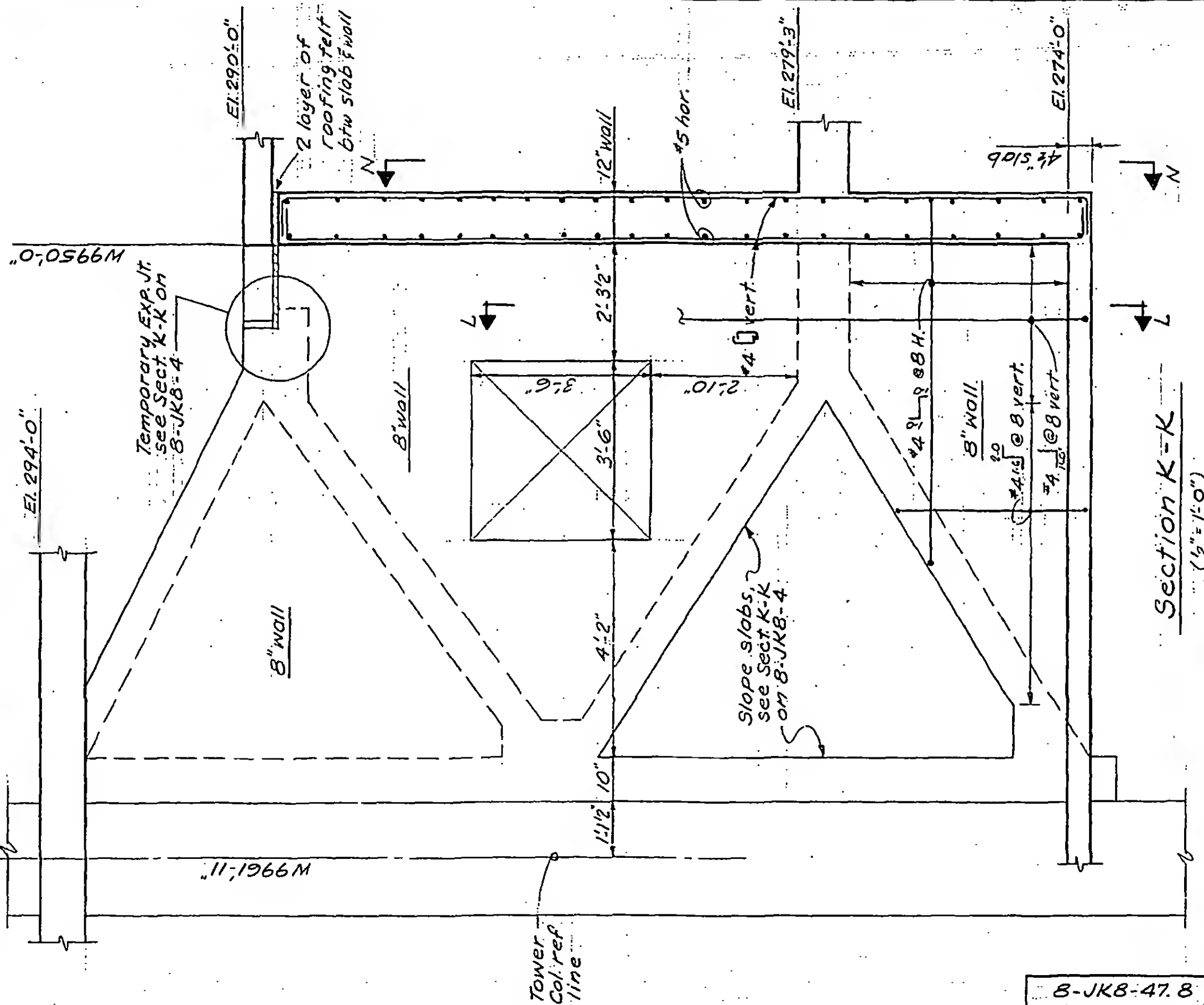
Structural & Civil Engineers

| TITLE |
|-------|
|-------|

SECTION AT EL. 284'-0"

DATE 8-29-69

REVISIONS



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S.C.

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E.L.

B-JK8-47.8

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

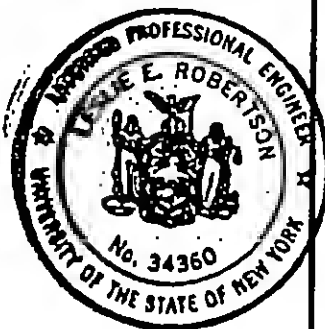
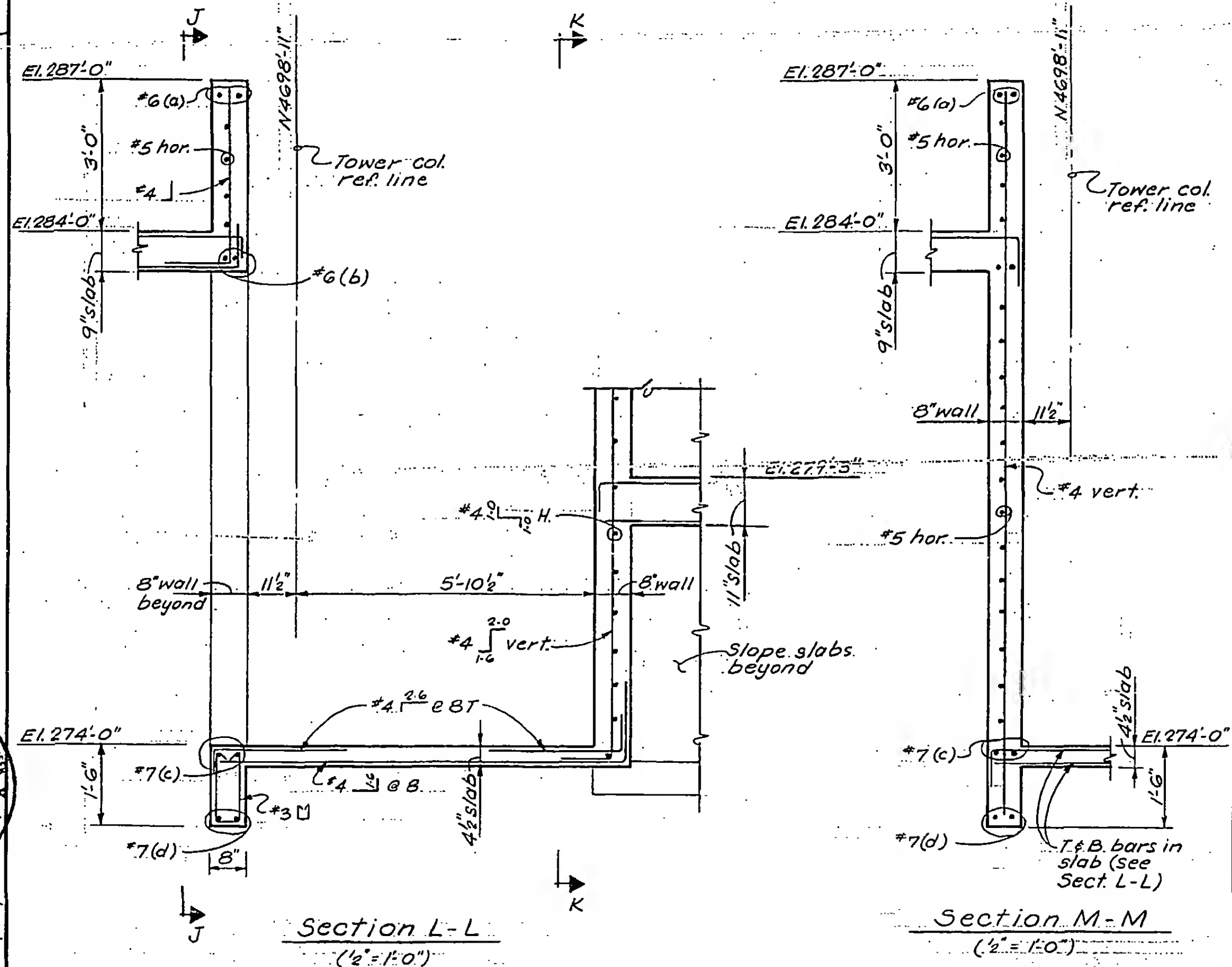
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE SECTIONS AT EL. 284'-0"

DATE 8-29-69

REVISIONS



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S.C.REVIEWED
E.L.

8-JK8-47.9

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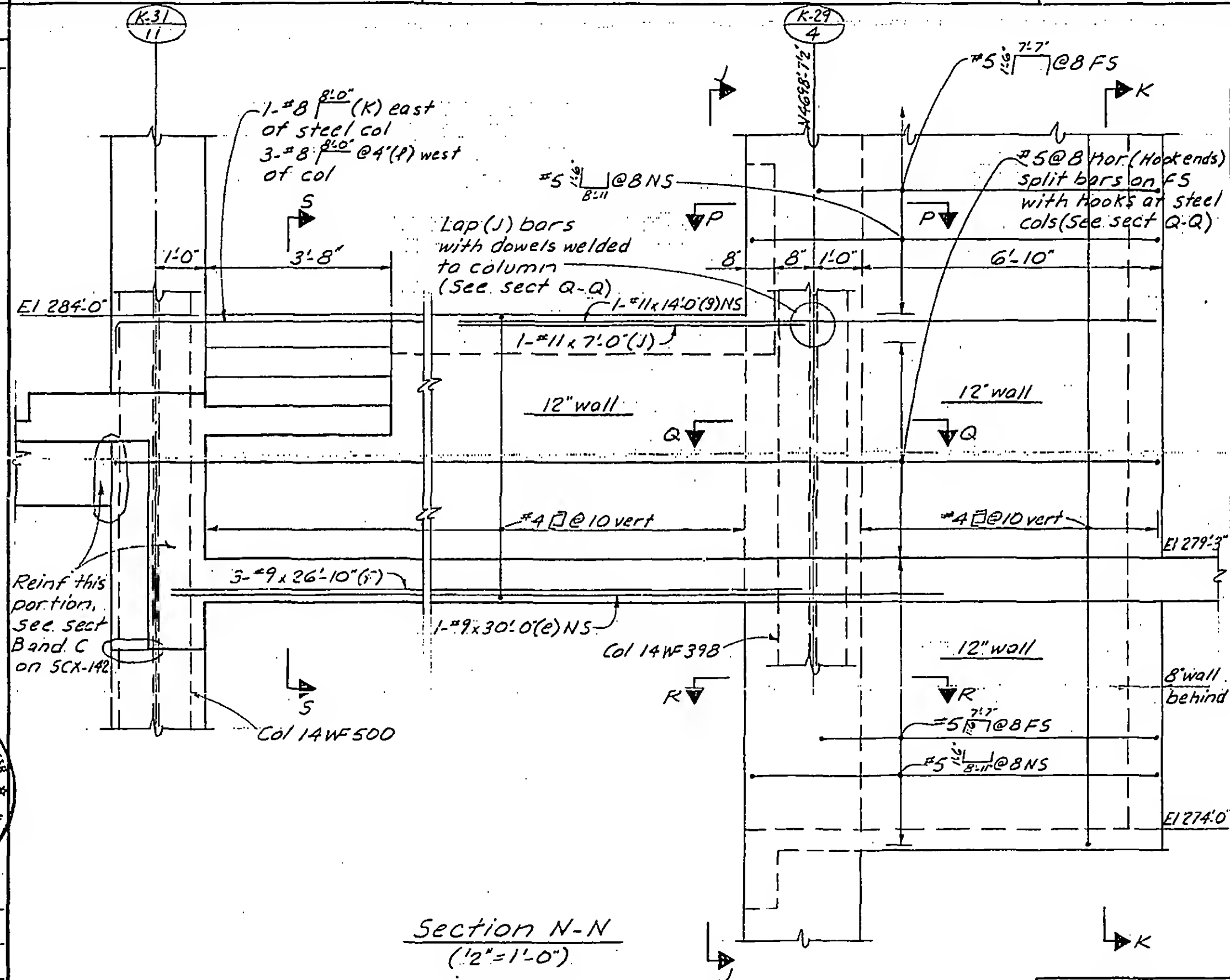
PROJECT *THE WORLD TRADE CENTER*

TITLE SECTIONS AT EL 284'-0"

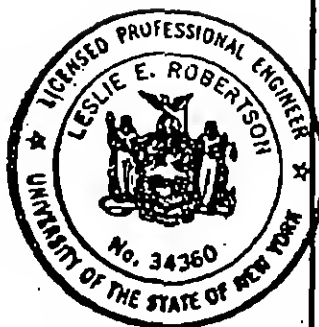
DATE 8-29-69

REVISIONS

12-12-69



8-JK8-47.10



DESIGNED

DRAWN
A. FRANQUI

REVIEWED
E.L.

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

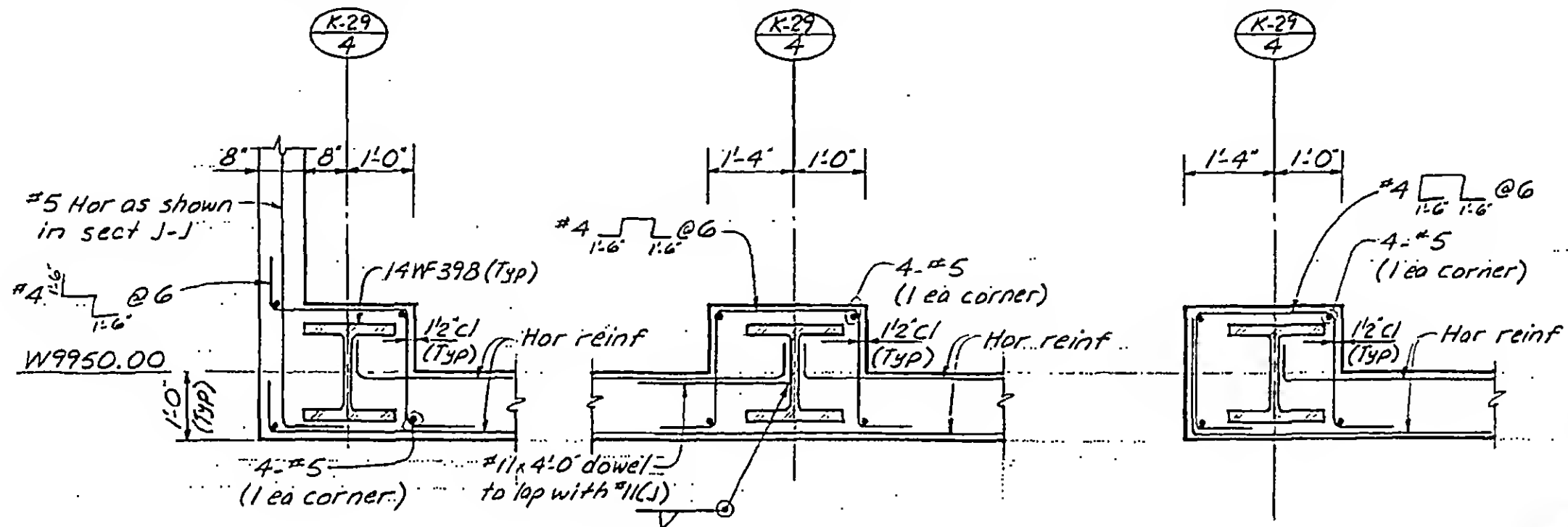
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE SECTIONS AT EL 284'-0"

DATE 8-29-69

REVISIONS



Section P-P
(1/2" = 1'-0")

Section Q-Q
(1/2" = 1'-0")

Section R-R
(1/2" = 1'-0")



DESIGNED

DRAWN

A. FRANQUI

REVIEWED

0-JNO-77/11

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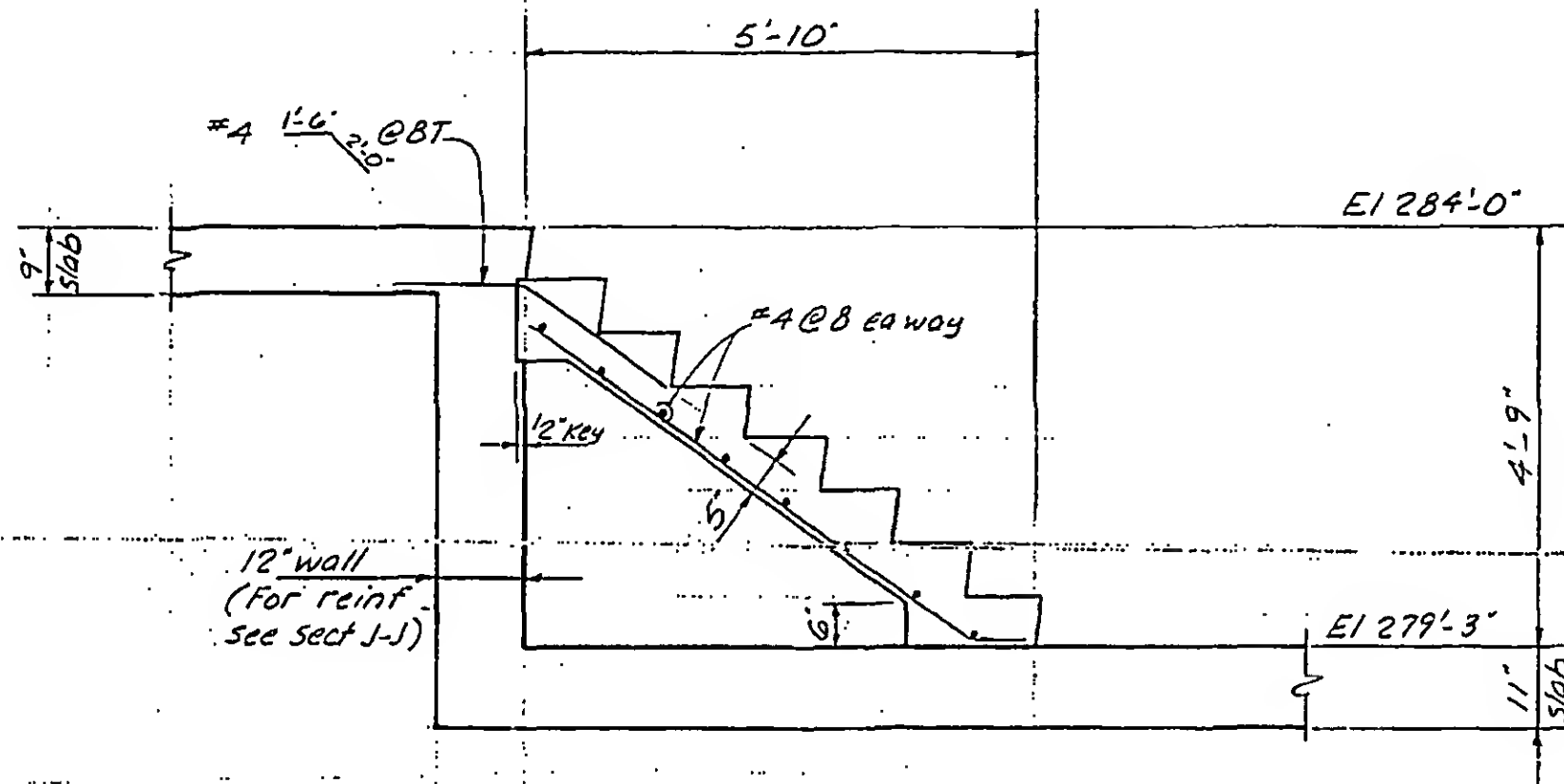
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

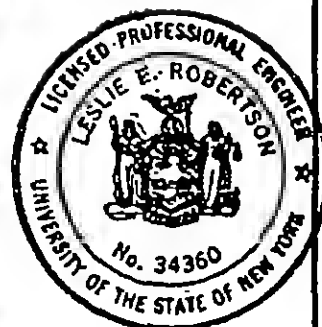
TITLE SECTION AT EL 284'-0"

DATE 8-29-69

REVISIONS



Section 5-5
(1/2" = 1'-0")



DESIGNED

DRAWN
A. FRANQUI

REVIEWED

8-JK8-47.12

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

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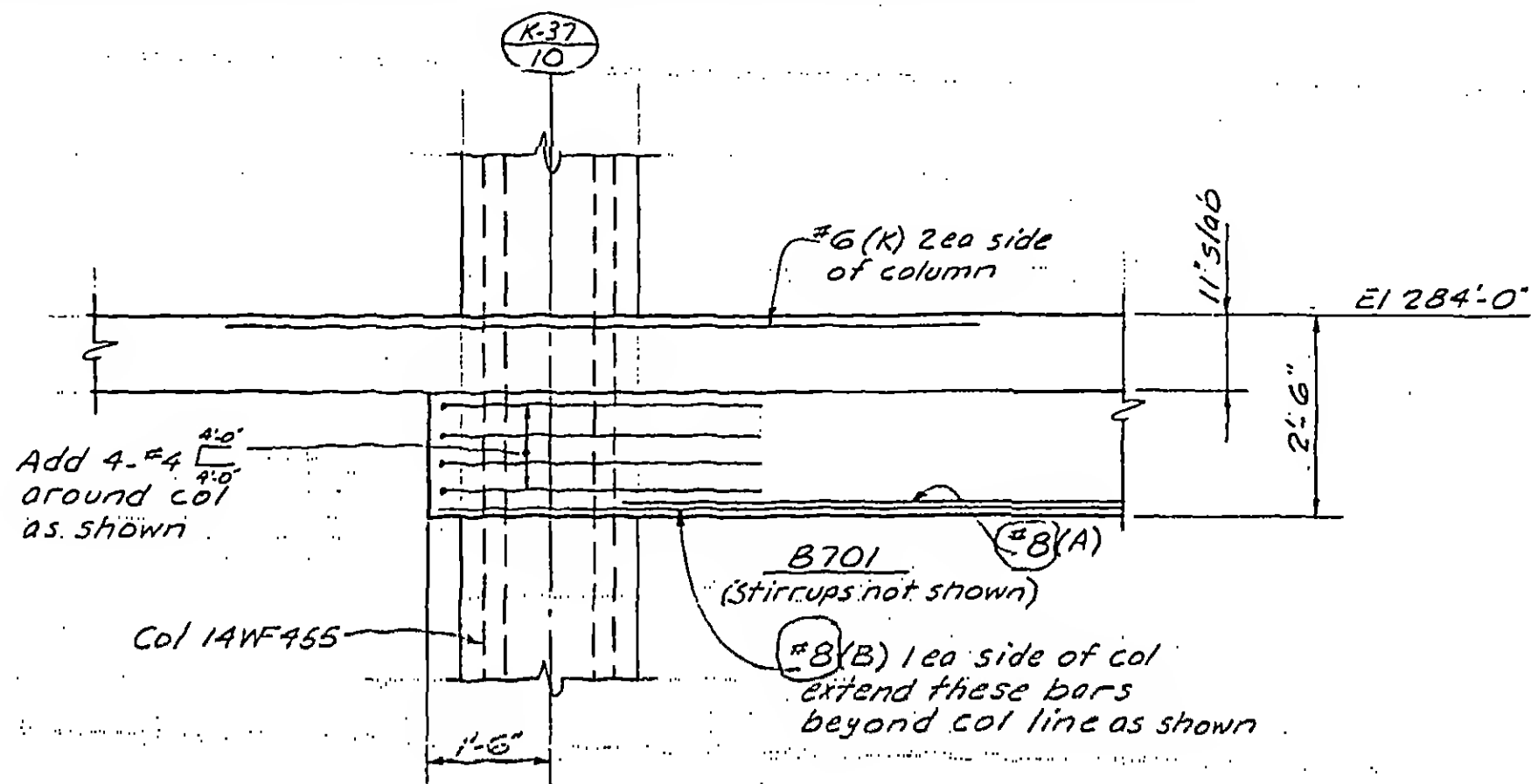
PROJECT THE WORLD TRADE CENTER

TITLE SECTION AT EL 284'-0"

DATE 8-29-69

REVISIONS

12-12-69



DESIGNED

DRAWN
A. FRANQUI

REVIEWED

E.L.

8-JK8-47.13

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

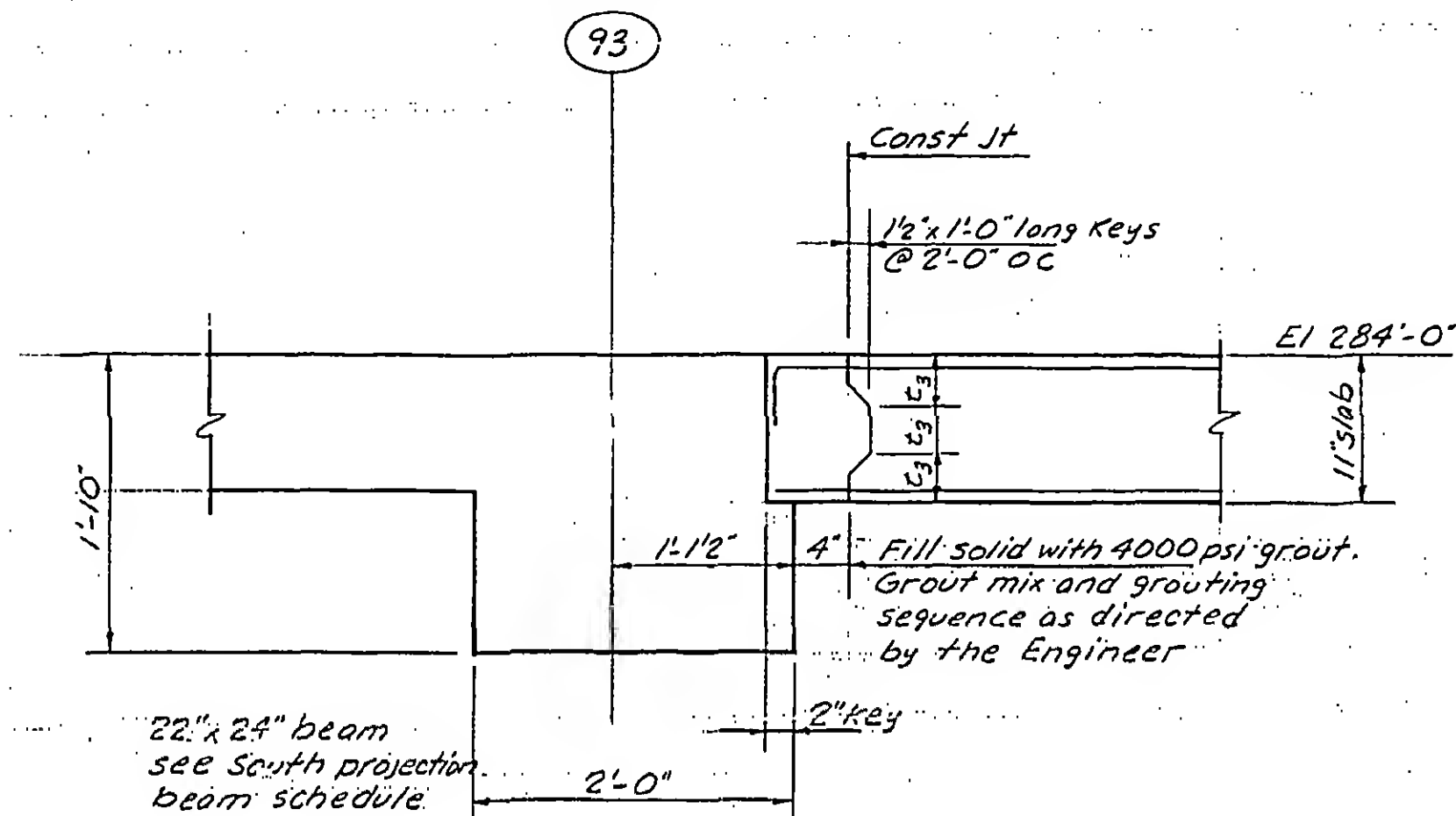
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE SECTION AT EL 284'-0"

DATE 8-29-69

REVISIONS



Section U-U
(1" = 1'-0")



DESIGNED

DRAWN
A. FRANQUI

REVIEWED

E.L.

8-JKB-47.14

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

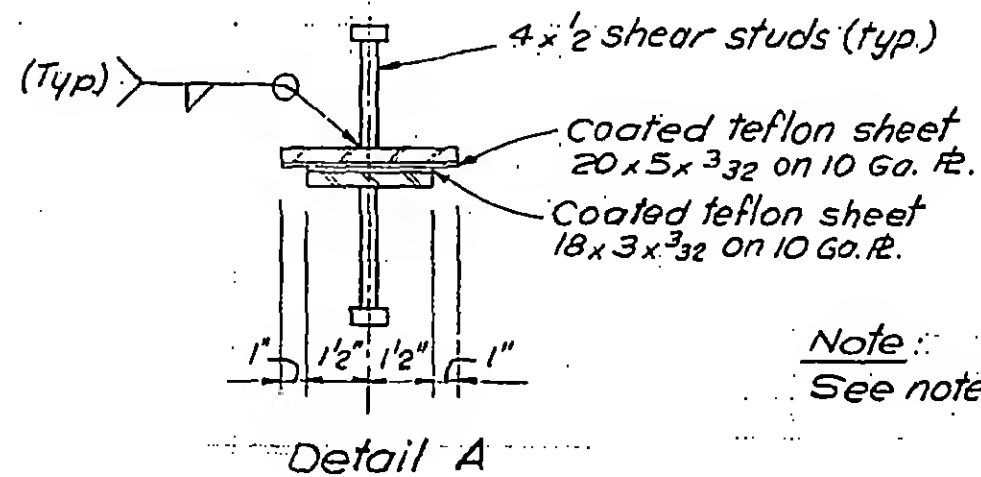
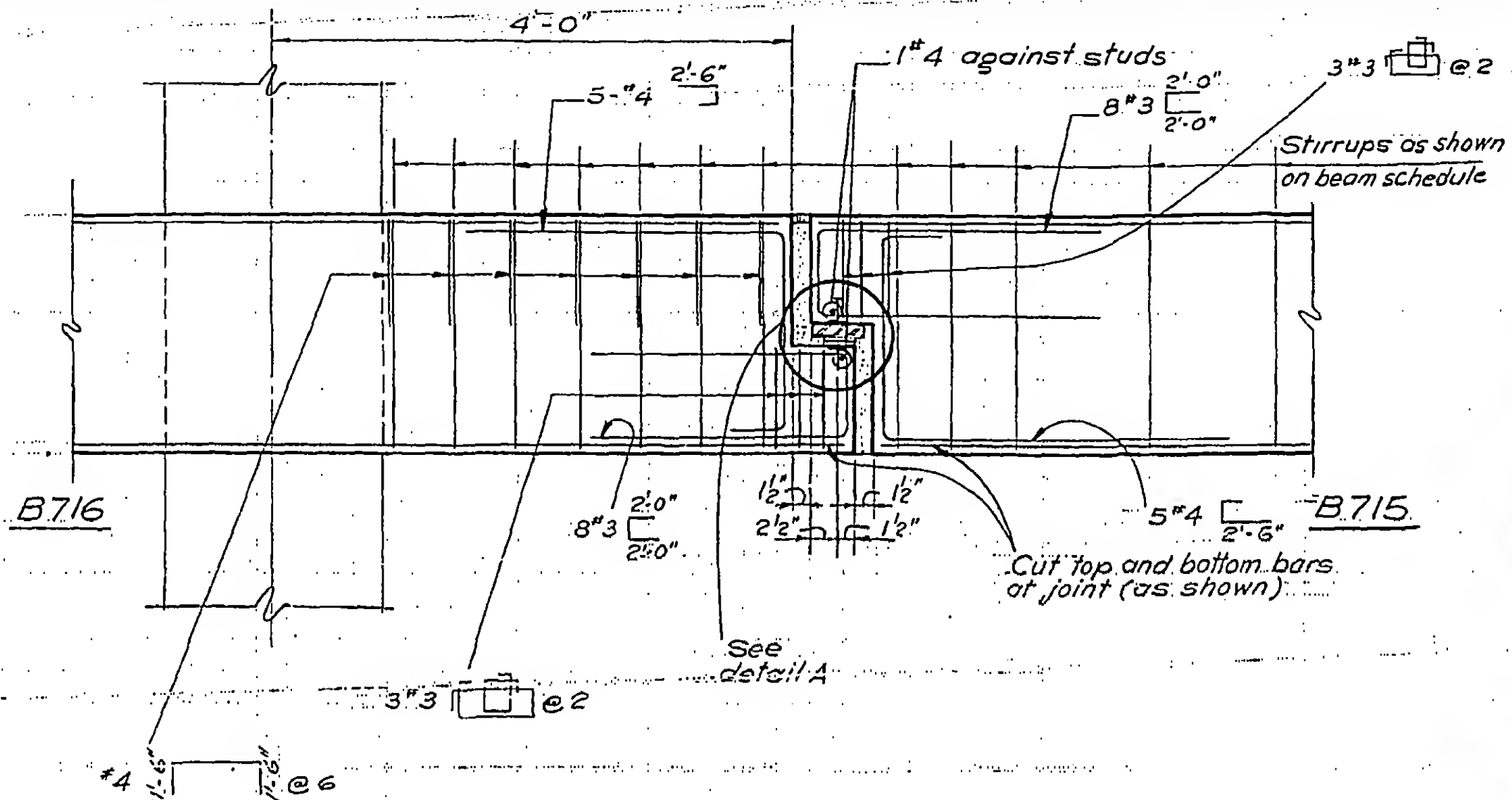
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE SECTIONS AT EL. 284'

DATE 3-19-70

REVISIONS



Note:
See notes on 8-JK5-14.1



DESIGNED

DRAWN

V.H.A.

REVIEWED

T.O.

8-JK8-47.15

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

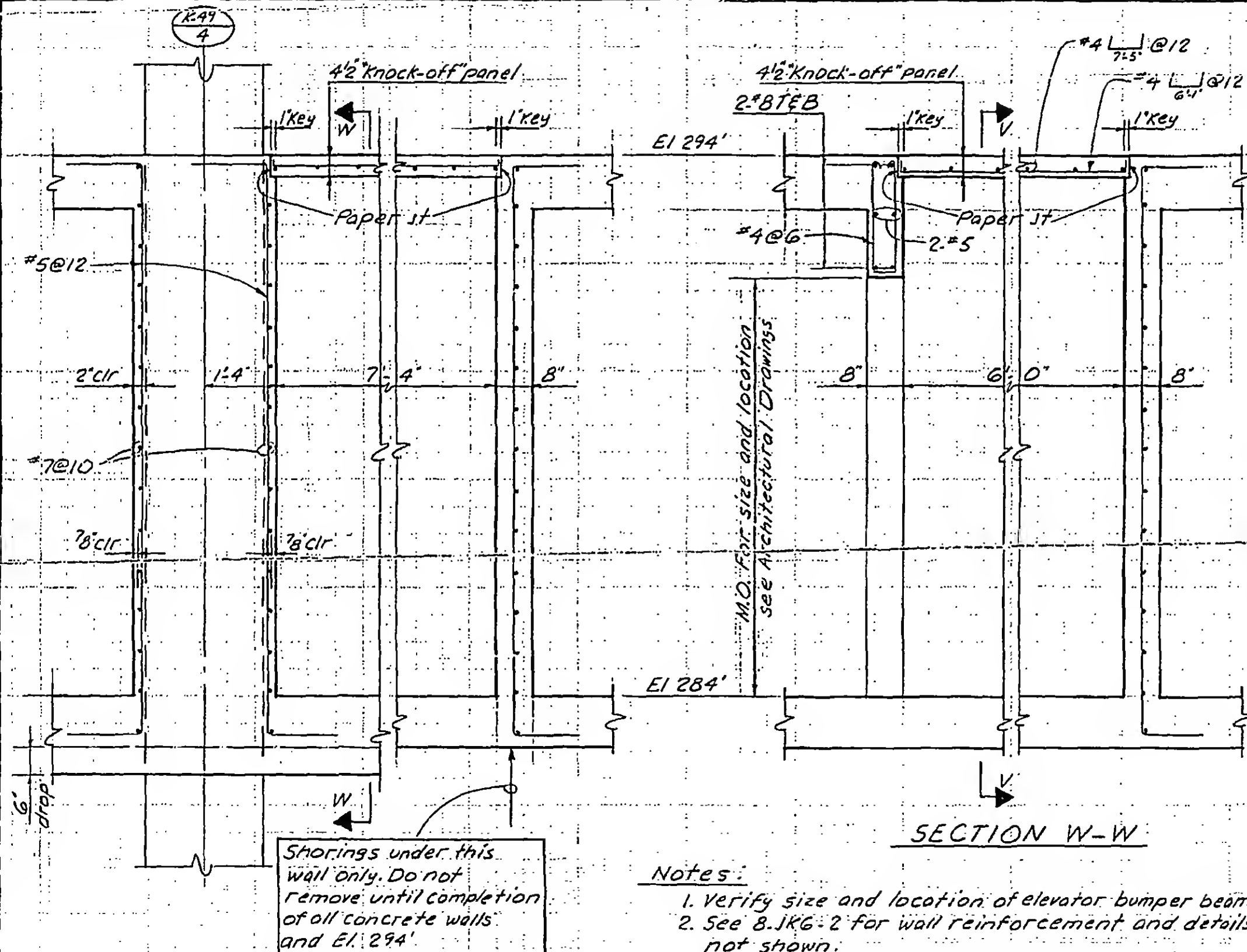
Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE FUTURE ELEVATOR HALL PIT

DATE 3-19-70

REVISIONS



SECTION V-V

SECTION W-W

Notes:

1. Verify size and location of elevator bumper beams.
2. See 8-JKB-2 for wall reinforcement and details not shown.
3. See elevator shop drawings for inserts, etc.

1/2" = 1'-0"

8-JKB-47.16



DESIGNED

DRAWN

A.F.

REVIEWED

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

TITLE SECTIONS

DATE 12-18-68

REVISIONS

3-7-69

4-21-69

Size & orientation of
dowels to match cols
(See col schedule)

#5 1/2" @ 12"

COL. J85-1

Inside face of
perimeter wall

12x1'-0" Keys

@ 2'-0" OC

Add 1-#6

Top & bot cont.

For slab reinf, see plan

El. 274'-0"

t (see plan)

4' Fill solid with 4000 psi Grout
Grout mix and grouting sequence
as directed by the Engineer

Const. jt

Dowels
for col.

3'-0"

a

a

#7 @ 12 hor.

#6 @ 12 vert.

#8 @ 6 vert.

El. 267'-0"

15" slab

4-#6

For slab reinf,
see plan

Const. jt

#4 @ 2 c.w.

5-#9

2' Key

4' Const. jt.

15" slab

El. 264'-0"

For reinf, see plan

Detail similar
to sect P-P
(8-JK7-6)

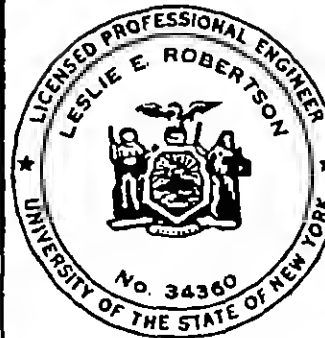
Section A-A



Section a-a

Notes:

1. See 8-JK6-2.3 for conn. detail between C.I.P. wall & Slurry wall.
2. All construction joints shown are essential. Contractor may omit any one of them, but shall not relocate or add any joint without the approval of the Engineer.



DESIGNED

DRAWN S.C.

REVIEWED

J.M. & E.L.

8-JK8-48.1

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PROJECT THE WORLD TRADE CENTER

TITLE SECTIONS

DATE 12-18-68

REVISIONS

3-7-69

Dry pack solid, f'_c 4000 psi
when directed by
the engineer

El. 274'-0"

A

Temp. exp. joint
for 106. see plan

1 1/2"

3/8" R

1/6" Teflon sheet coated on each R.

Add 5 #5 @ 6" o.c.

6-8" ϕ studs
f. & b.

3/8" R

Add 3-#5 3'-0"

(Typ)

27" wall

8-JKT-6
P

El. 267'-0"

30" wall

El. 264'-0"

A

27" wall

Section B-B

P



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S.C.

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8-JKB-48.2

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TITLE SECTION

DATE 12-18-68

REVISIONS

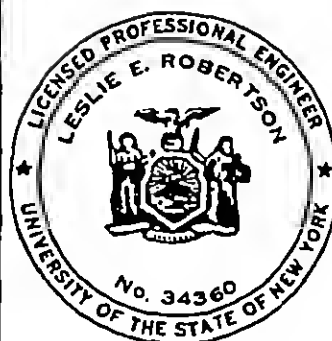
2-#4 cont.

#3 @ 12

1.6" (Typ.)

For reinf. see plan

SECTION C-C



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8-JK8-48.3

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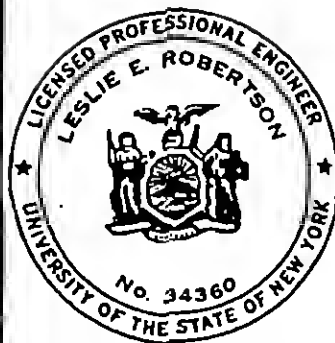
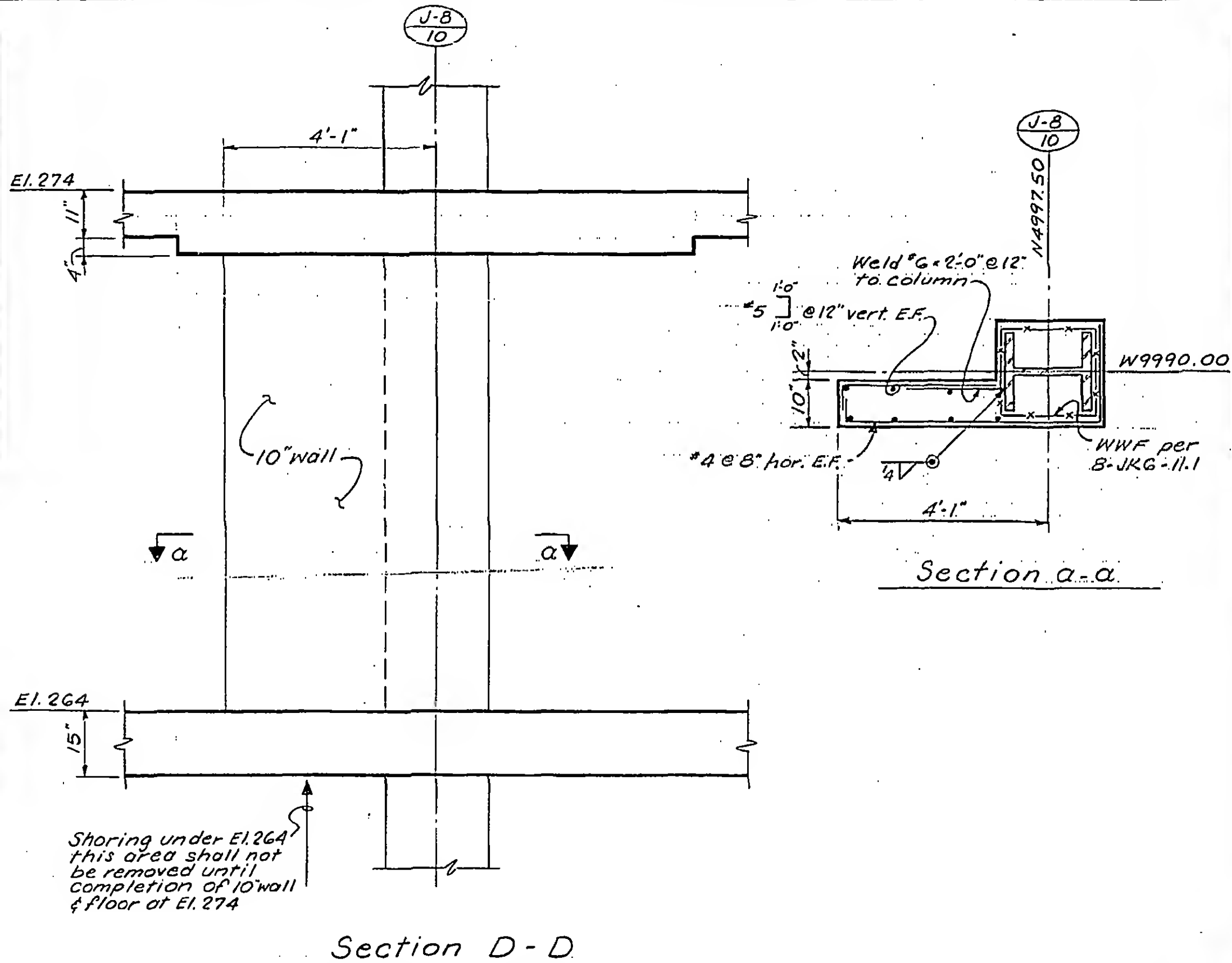
PROJECT THE WORLD TRADE CENTER

TITLE

SECTIONS

DATE 12-18-68

REVISIONS

5-16-69 GEN.
REV.

DESIGNED

DRAWN
S.C.REVIEWED
E.L.

8-JK8-48.4

Structural & Civil Engineers

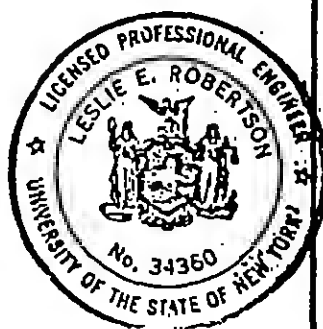
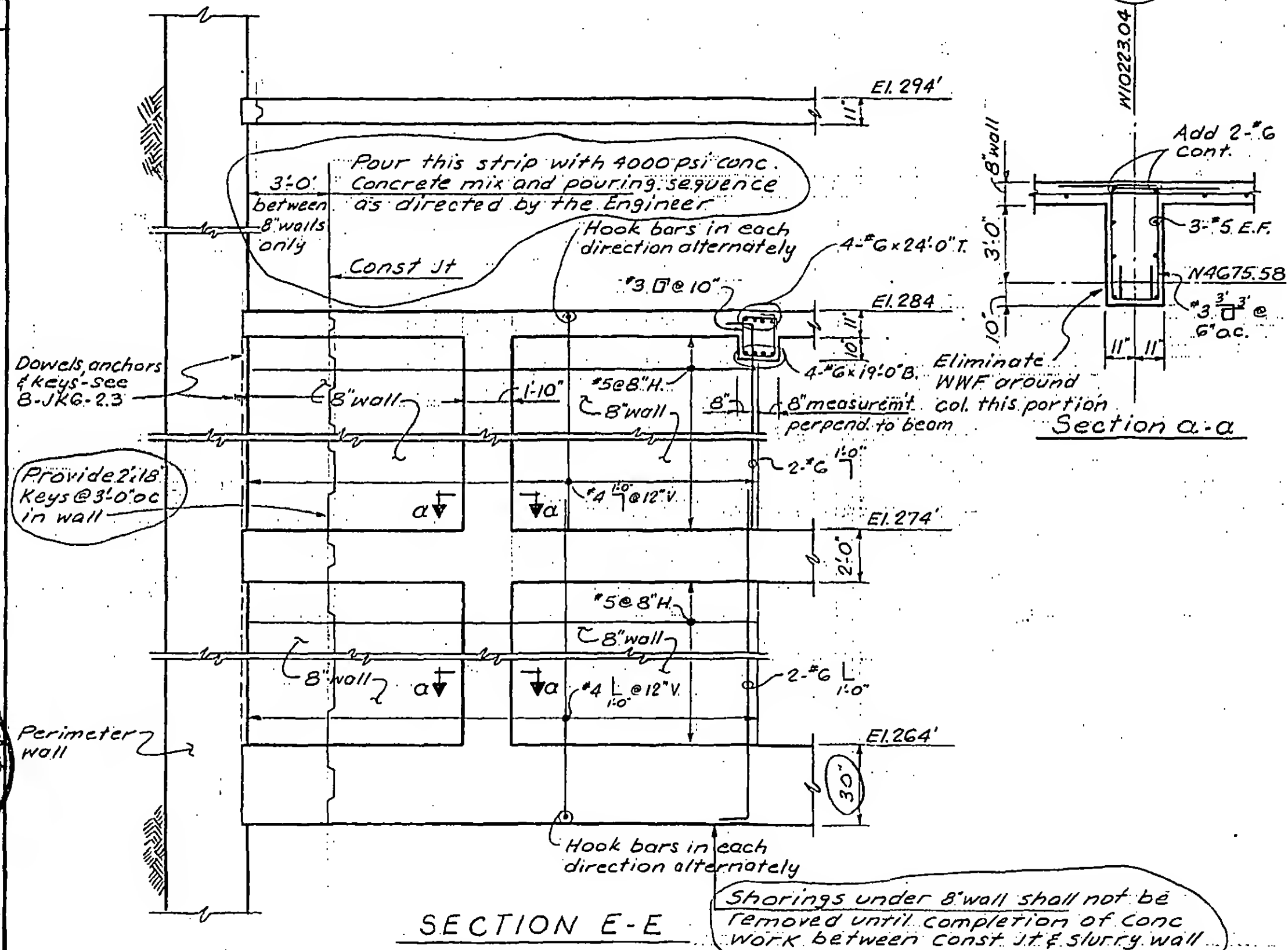
PROJECT *THE WORLD TRADE CENTER*

TITLE .. *SECTIONS*

| | |
|------|---------|
| DATE | 1-31-69 |
|------|---------|

REVISIONS

4-21-69



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8-JK8-48.5

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PROJECT THE WORLD TRADE CENTER

TITLE SECTIONS

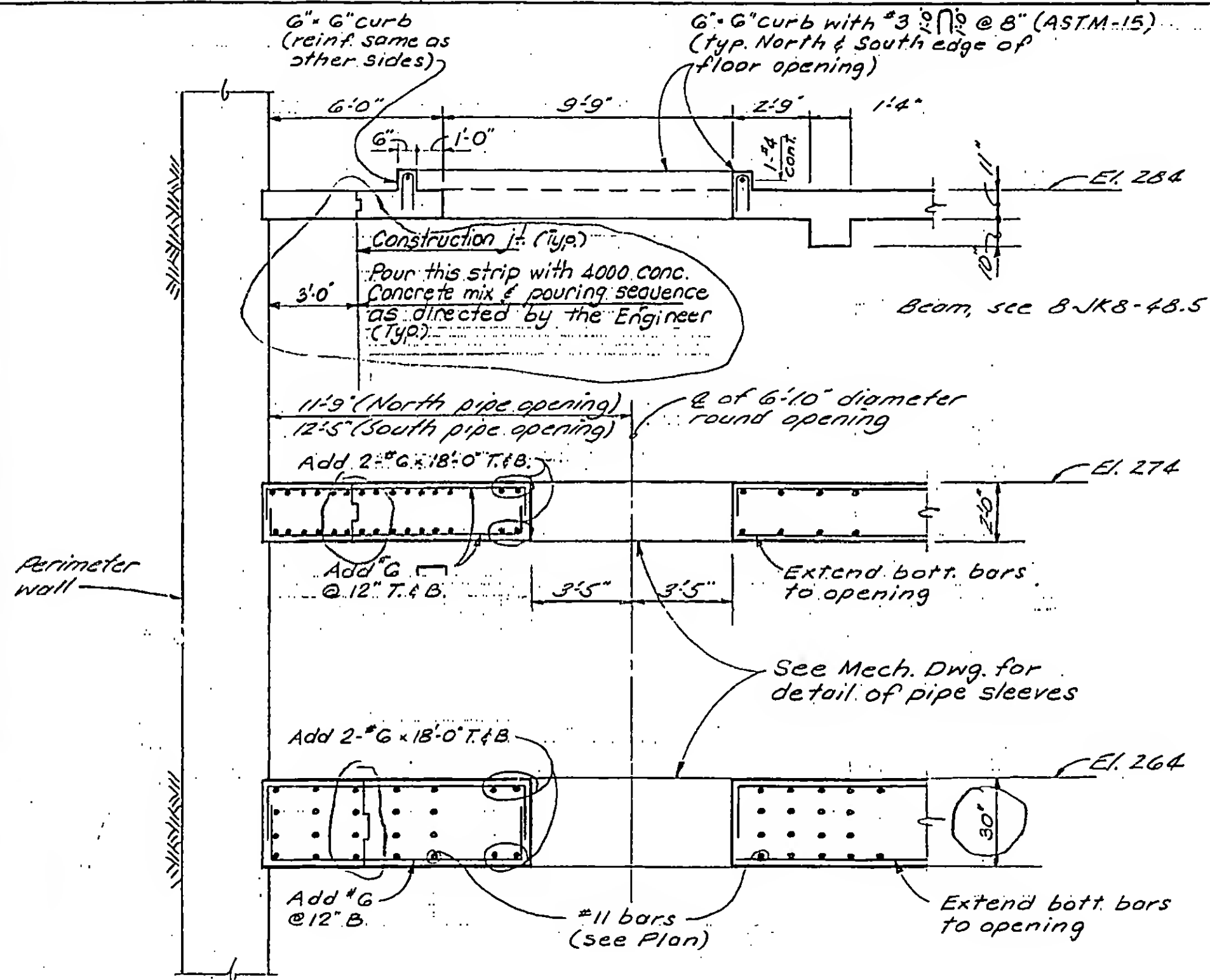
DATE 1-31-69

REVISIONS

2-20-69

4-9-69

4-21-69



Section F-F



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8-JK8-48.6

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PROJECT THE WORLD TRADE CENTER

TITLE SECTIONS

DATE 1-31-69

REVISIONS

4-21-69

11/26/71

12/28/71

Top of Ramp 'A'

Construction Joint (K-31/51)

Pour this strip with 4000 conc. concrete mix. pouring sequence as directed by the Engineer (Typ.)

Hook bars in ea. direction alternately

18"±6"

8" 8"

El. 284'

Beam B7012

#5@8"H

Eliminate WWF around col. this portion.

Beam, see 8-JK8-48.5

Dowels, Anchors & Keys, see 8-JK6-2.6.

Provide 2" x 18" Keys @ 3'-0" o/c in wall

Perimeter wall

New 30" φ

Sect. b-b

Beam B574

#5@8"H

Hook all exist. reinf. at new opening

8" Wall

4-#5c

2-#6 1'-0"

El. 264'

Remove exist. concrete as indicated without damaging existing reinforcing

Coat entire surface of existing concrete with approved bonding compound and recast concrete with $f_c = 4000$ "non-shrink" concrete.

Hook bars in ea. direction alternately.

SECTION G-G

1. Shoring under 8" wall shall not be removed until completion of concrete work between construction joint and slurry wall.

2. Shoring shall be maintained or reinstalled during work required to provide new 30" φ openings.

8-JK8-48.7



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DRAWN G.S.

REVIEWED E.L.

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PROJECT THE WORLD TRADE CENTER

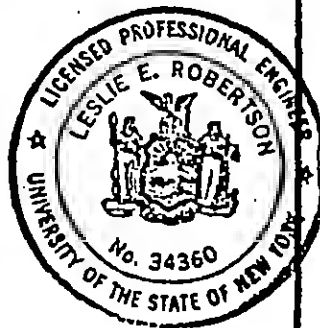
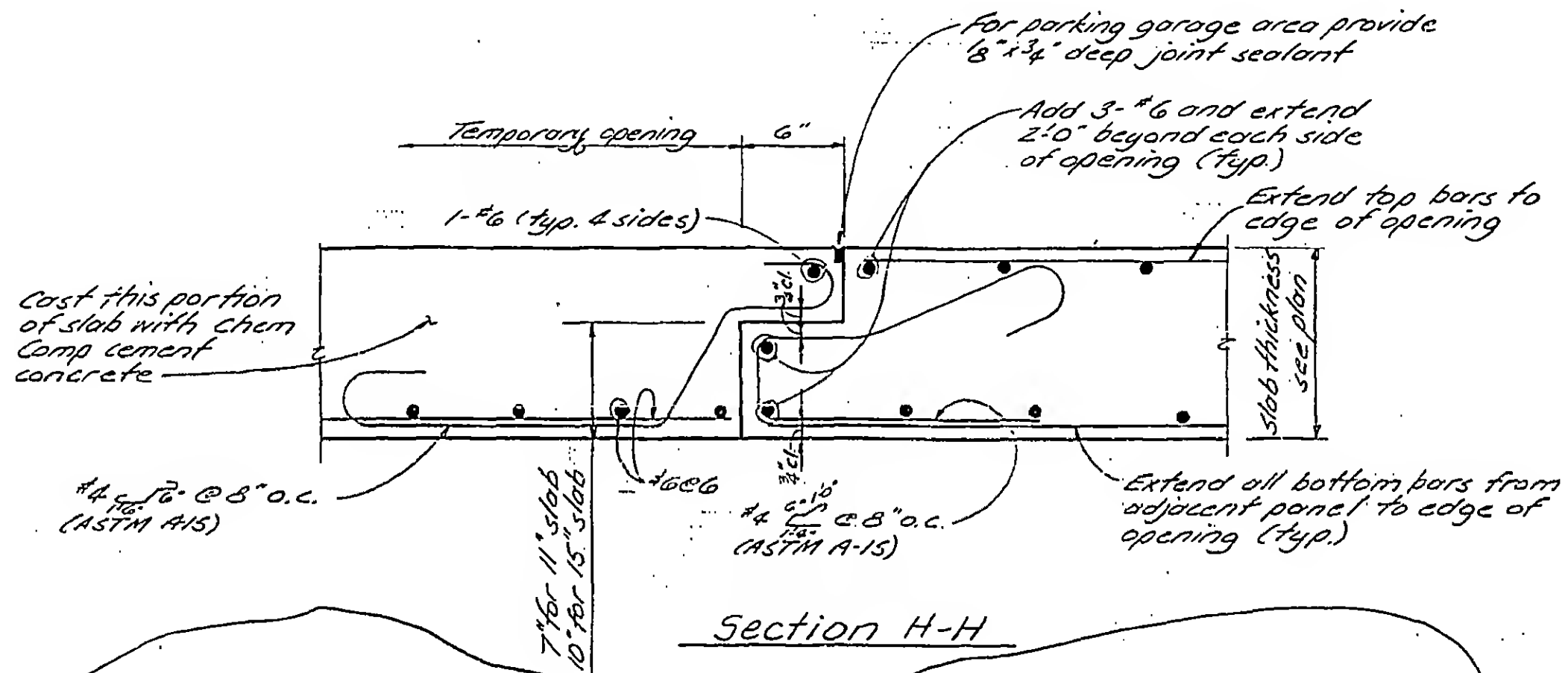
TITLE SECTIONS

DATE 1-31-69

REVISIONS

1-15-72

3-15-73



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DRAWN

J. Adams

REVIEWED

E.L.

E-JK8-48.8

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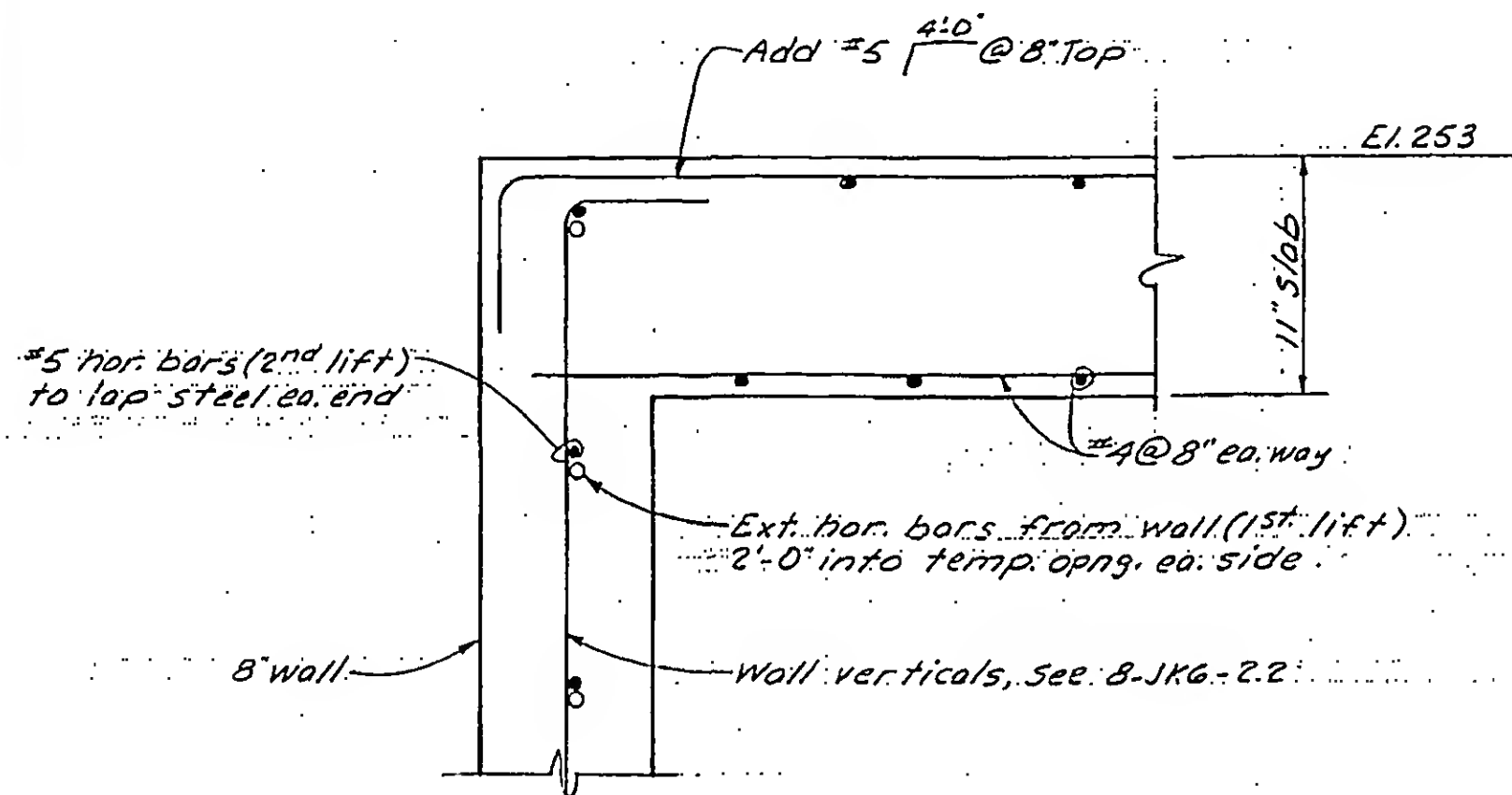
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TITLE SECTION

DATE 2-6-69

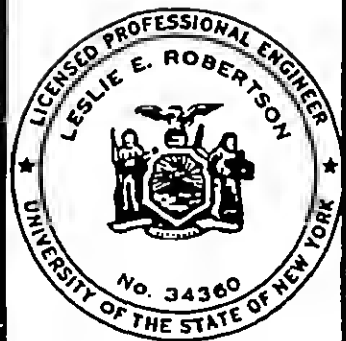
REVISIONS



Section J-J

Notes:

1. Cast this portion of slab & wall (within temporary opng.) with Chem. comp. cement concrete.



2-4-69

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DRAWN

A.L.F.

REVIEWED

E.L.

8-JK8-48.9

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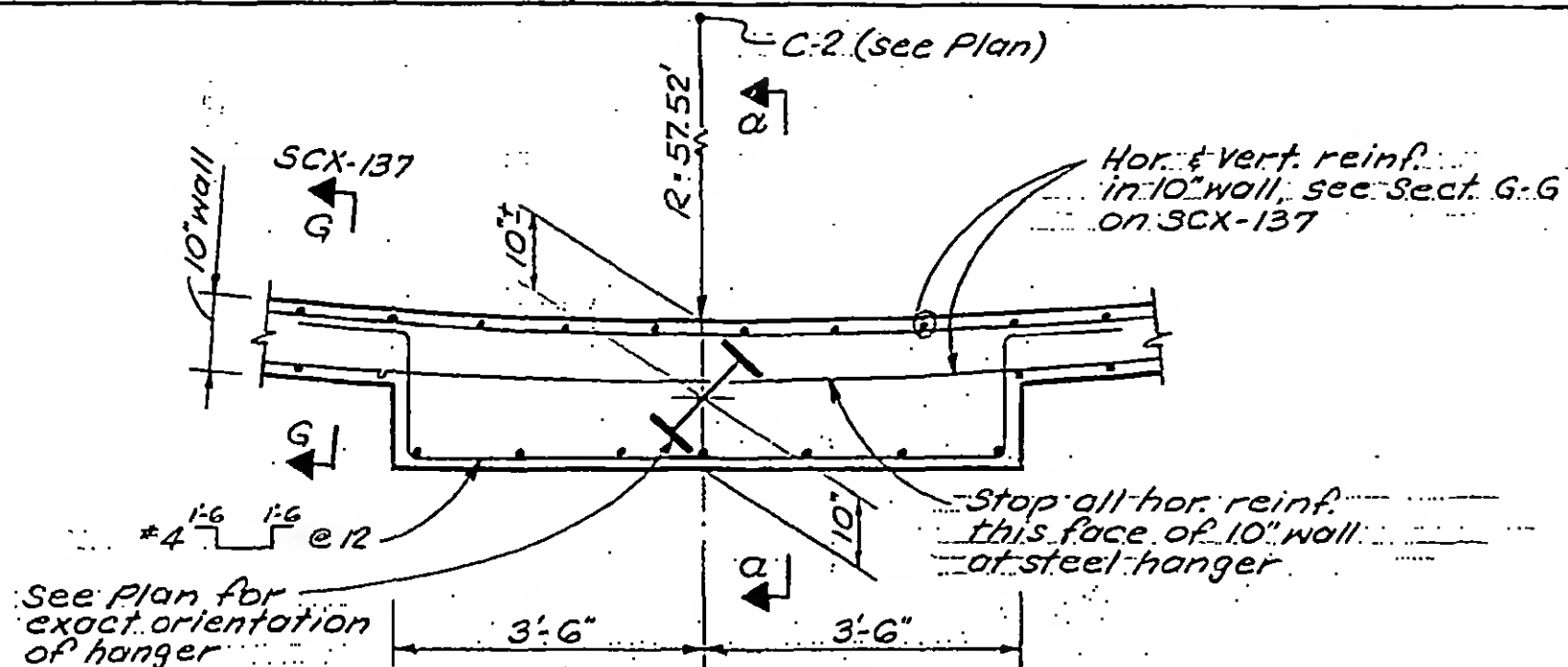
PROJECT THE WORLD TRADE CENTER

TITLE

SECTIONS

DATE 7-14-69

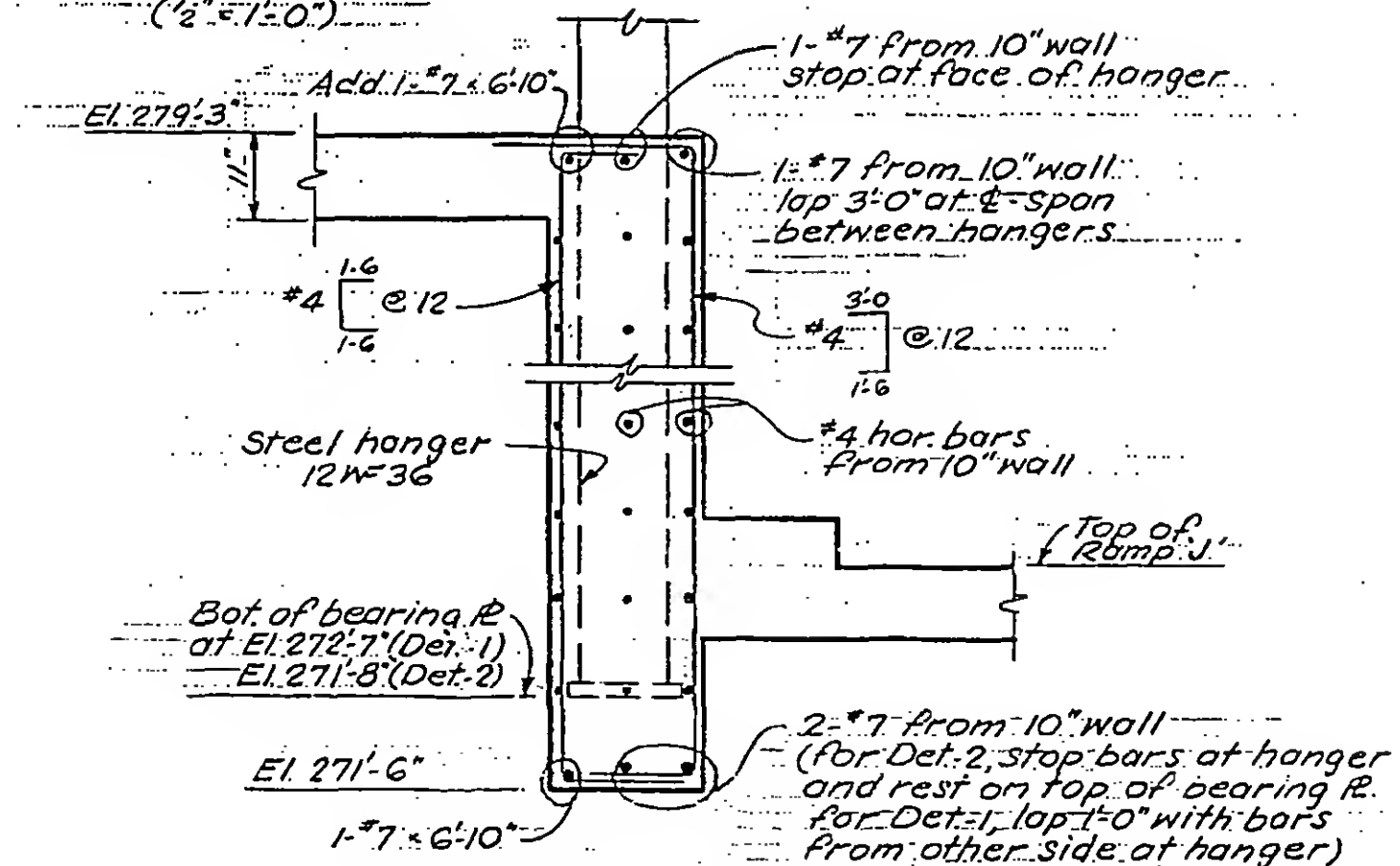
REVISIONS



Detail - 1

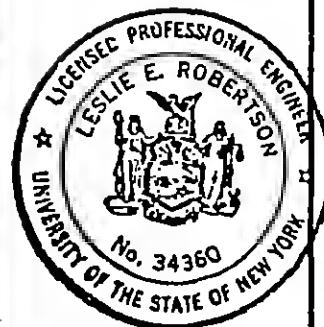
Detail - 2

(1/2" = 1'-0")



Section a-a

(1/2" = 1'-0")



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8-JK8-48.10

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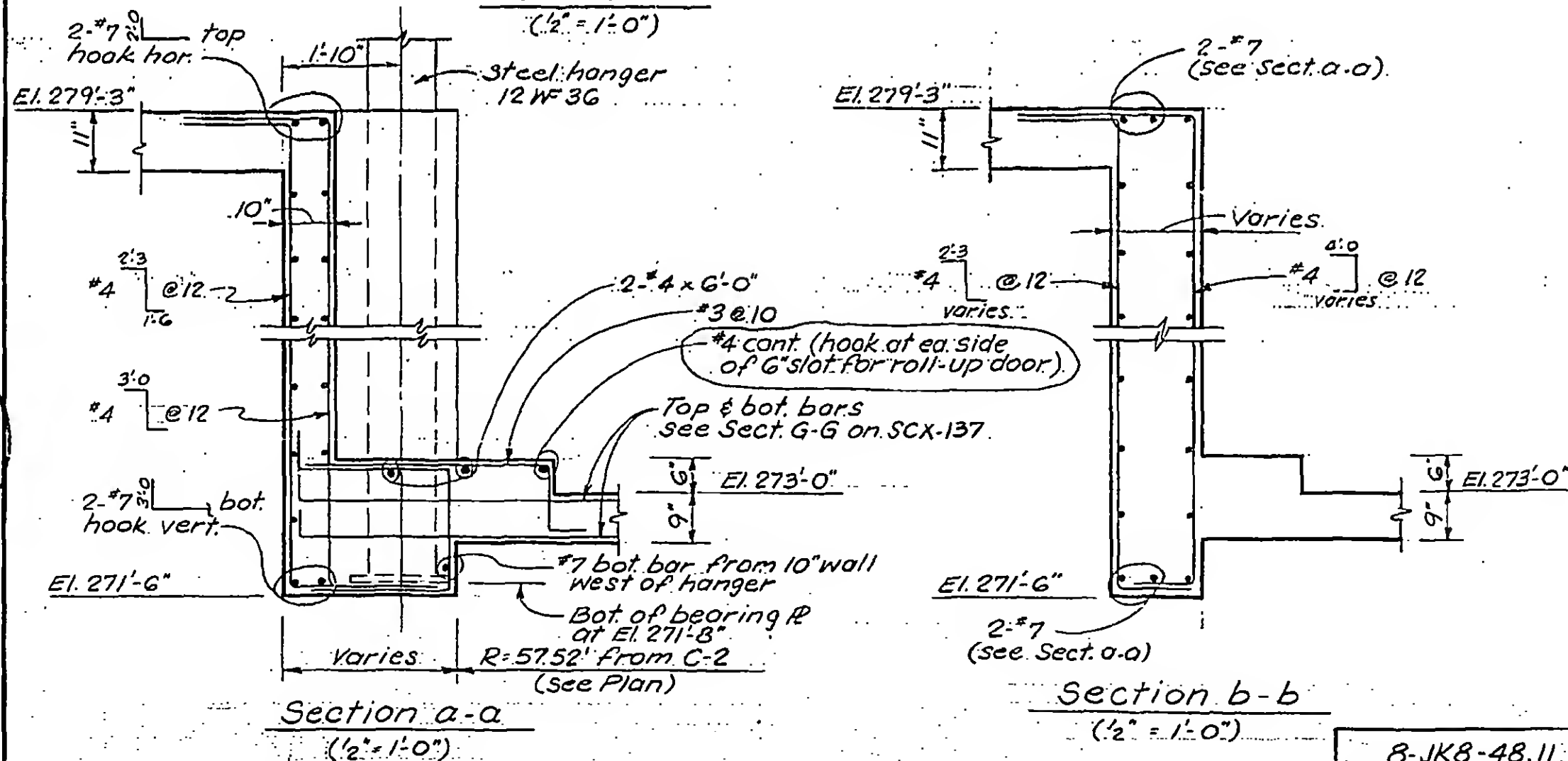
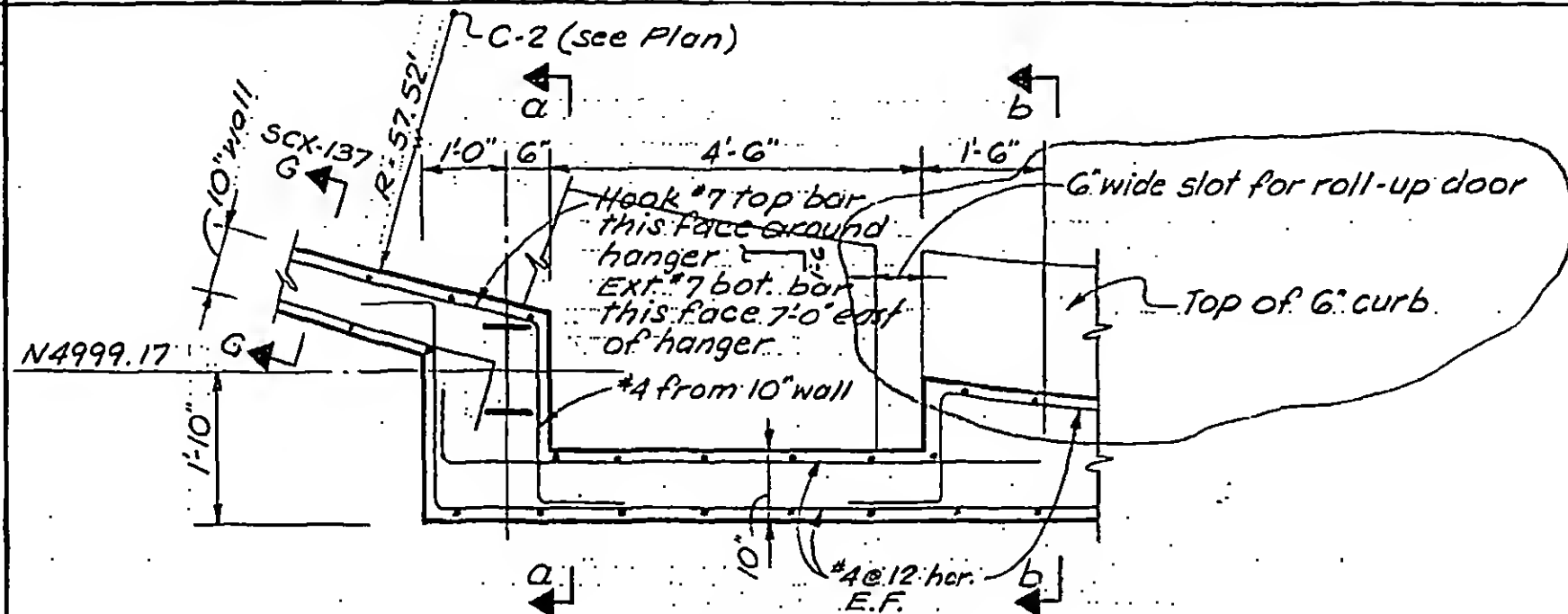
TITLE

SECTIONS

DATE 7-14-69

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4-28-70



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8-JK8-48.11

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THE WORLD TRADE CENTER

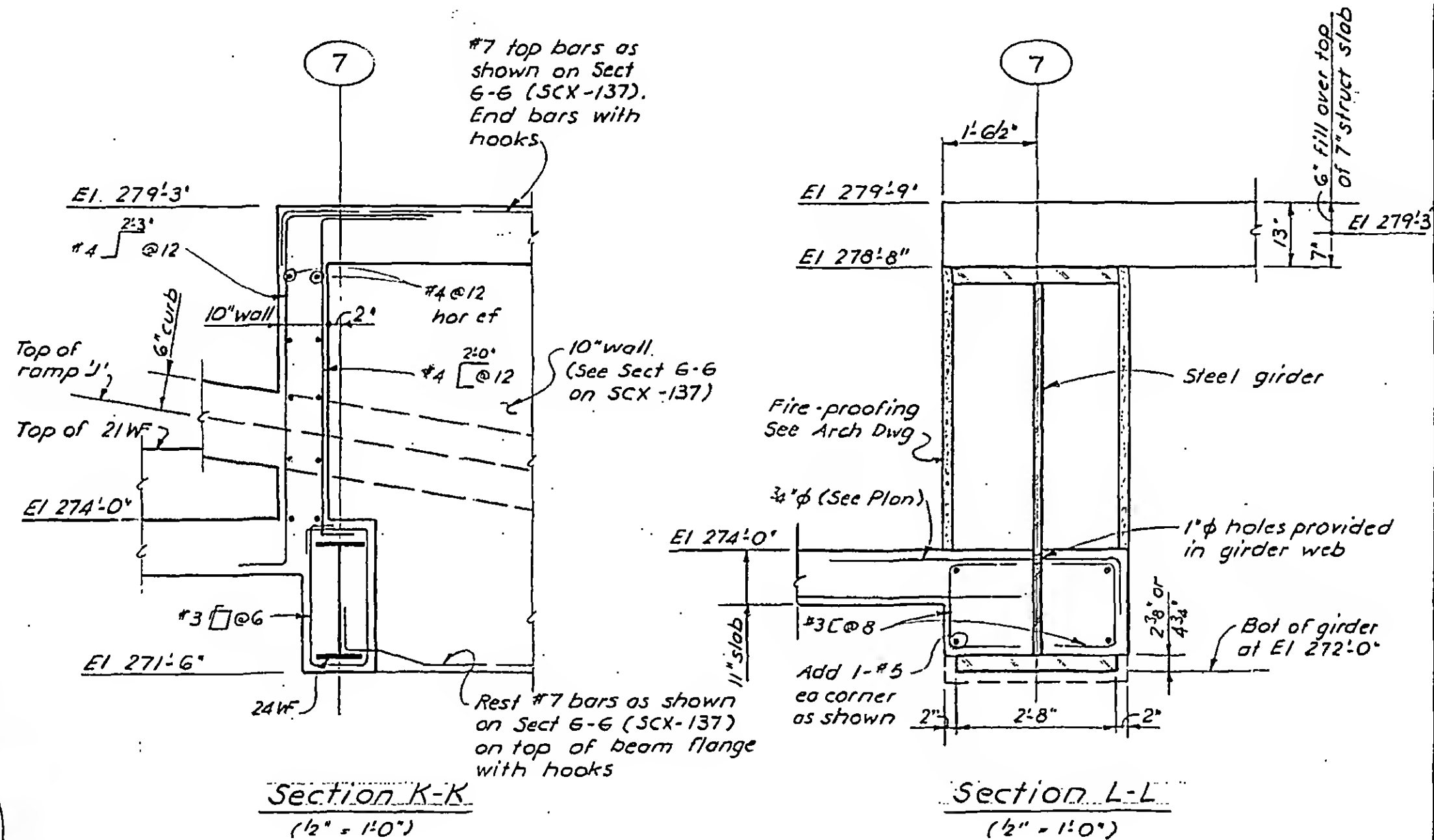
TITLE

SECTIONS

DATE

7-14-69

REVISIONS



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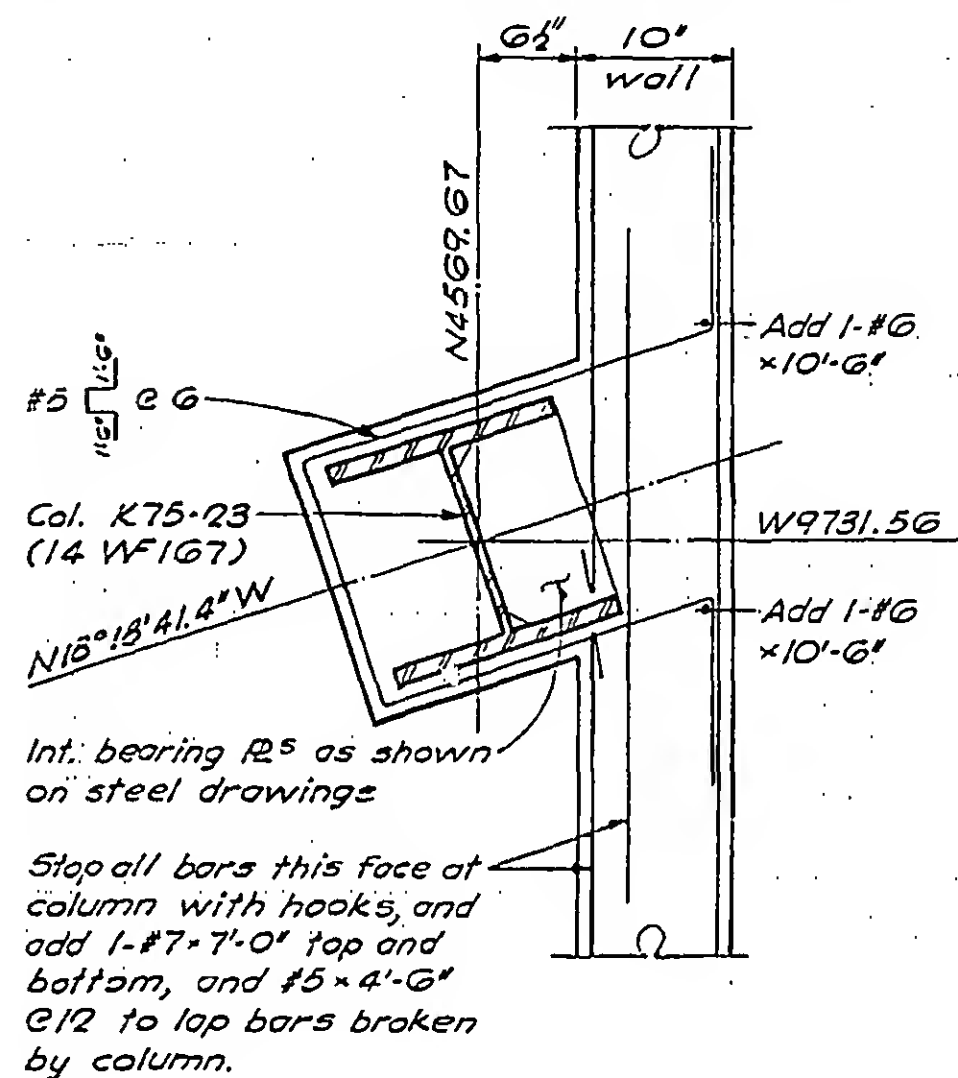
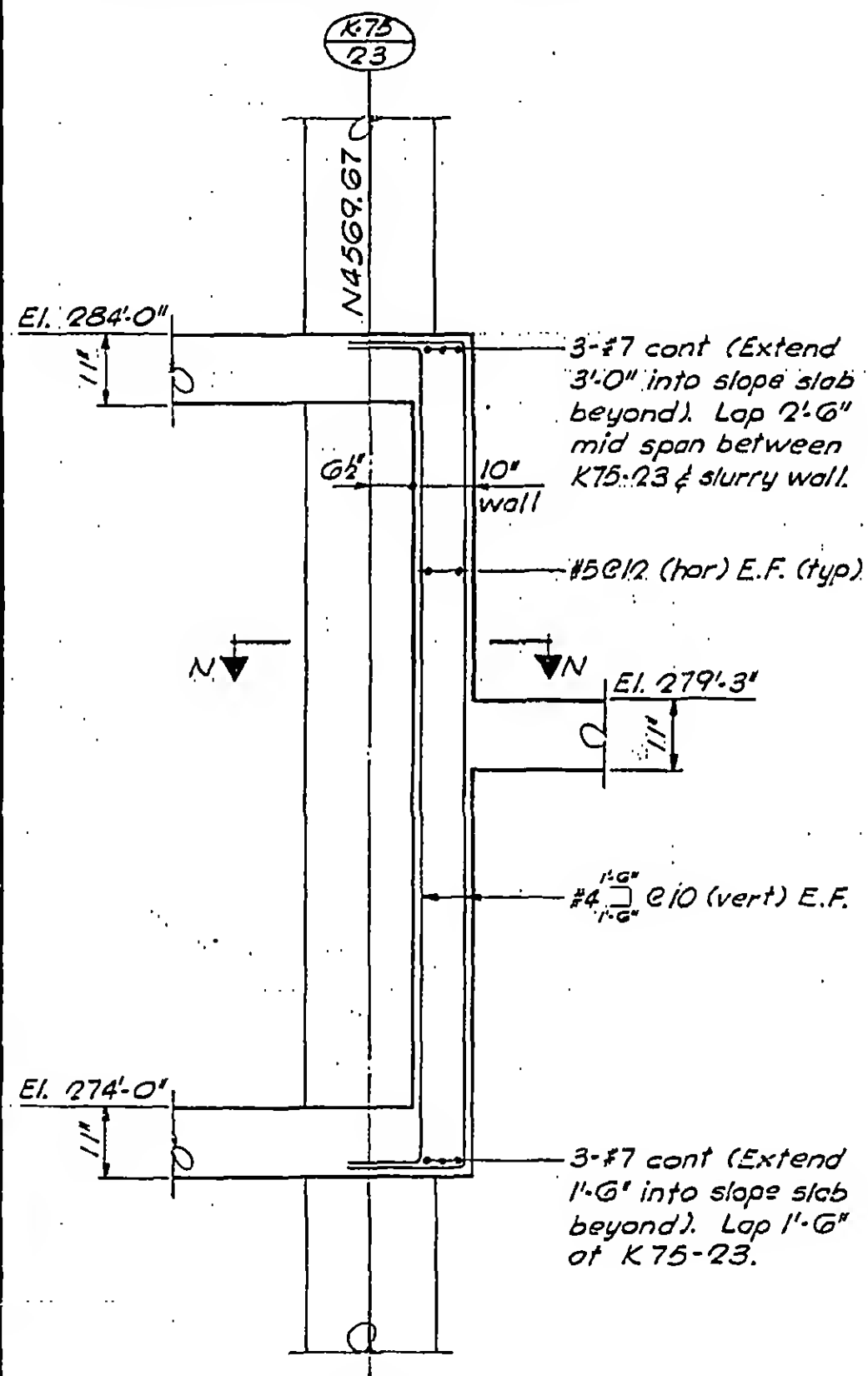
F. Smith

REVIEWED

E.L.

8 JK8-48.12

REVISIONS



SECTION N-N
11'-0"



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DRAWN
G.K.

REVIEWED
E.L.

SECTION M-M
($\frac{1}{2}'' = 1'-0''$)

8-JK8-48.13

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PROJECT THE WORLD TRADE CENTER

TITLE SECTIONS

DATE 11-25-69

REVISIONS

Construction joint

Pour this strip of wall
with 4000 psi concrete.
Concrete mix and pouring
sequence as directed by
the engineer.

3'-0"

El. 284'-0"



Provide 2"x12"
keys @ 2'-0" oc.
in wall.

El. 279'-3"

10" wall

El. 274'-0"



Shoring under 8" wall
shall not be removed
until completion of
concrete work between
construction joint and
slurry wall.

Dowels, anchors
and keys. See
8-JK6-2.3.

Slurry wall.

SECTION P-P

(1/2"=1'-0")

8-JK8-48.14



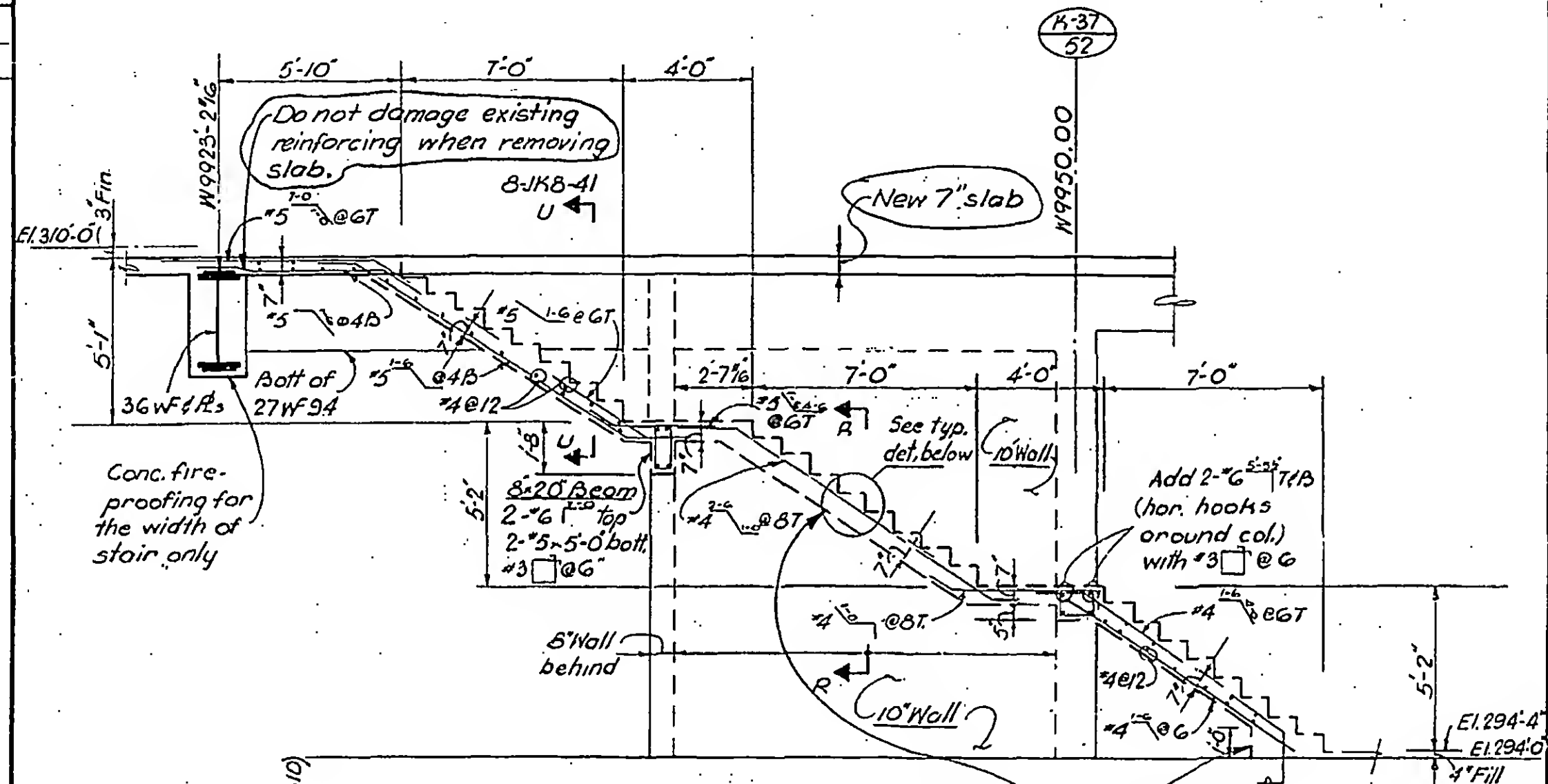
DESIGNED

DRAWN
G.K.REVIEWED
E.L.

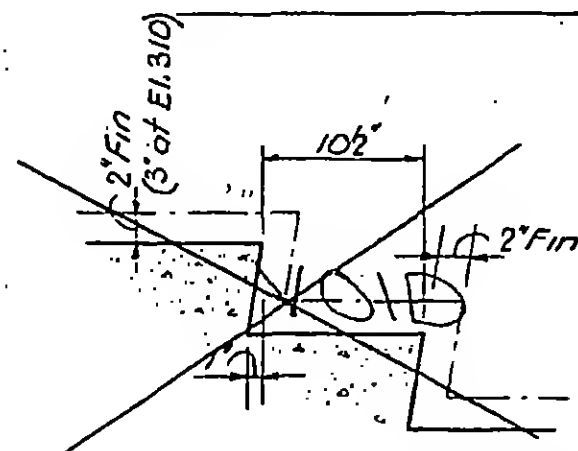
REVISIONS

4-28-70

10-29-71

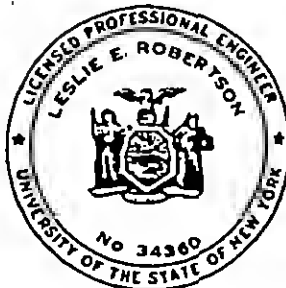


SECTION Q-Q
(4"=1'-0")



TYPICAL DETAIL
OF STEPS

Remove existing stair concrete to clean line at wall and slab:



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E.L.

8-JK 8-48.15

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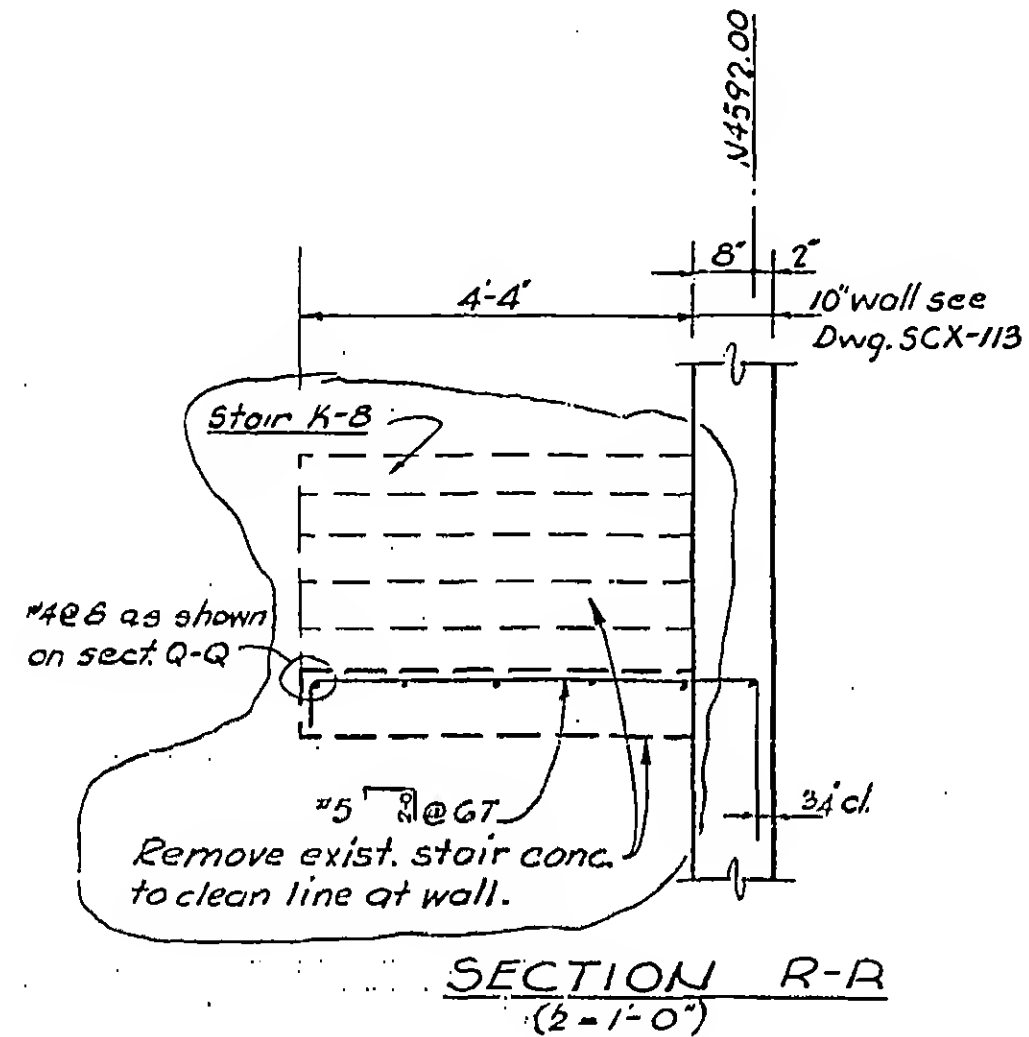
| | |
|--------------|--|
| TITLE | |
|--------------|--|

SECTIONS

| | |
|------|---------|
| DATE | 1-16-70 |
|------|---------|

REVISIONS

10-29-71



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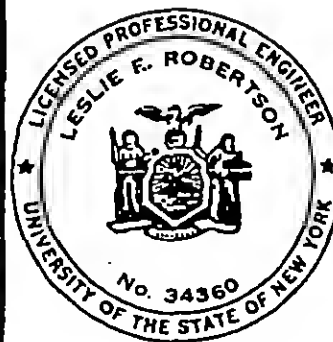
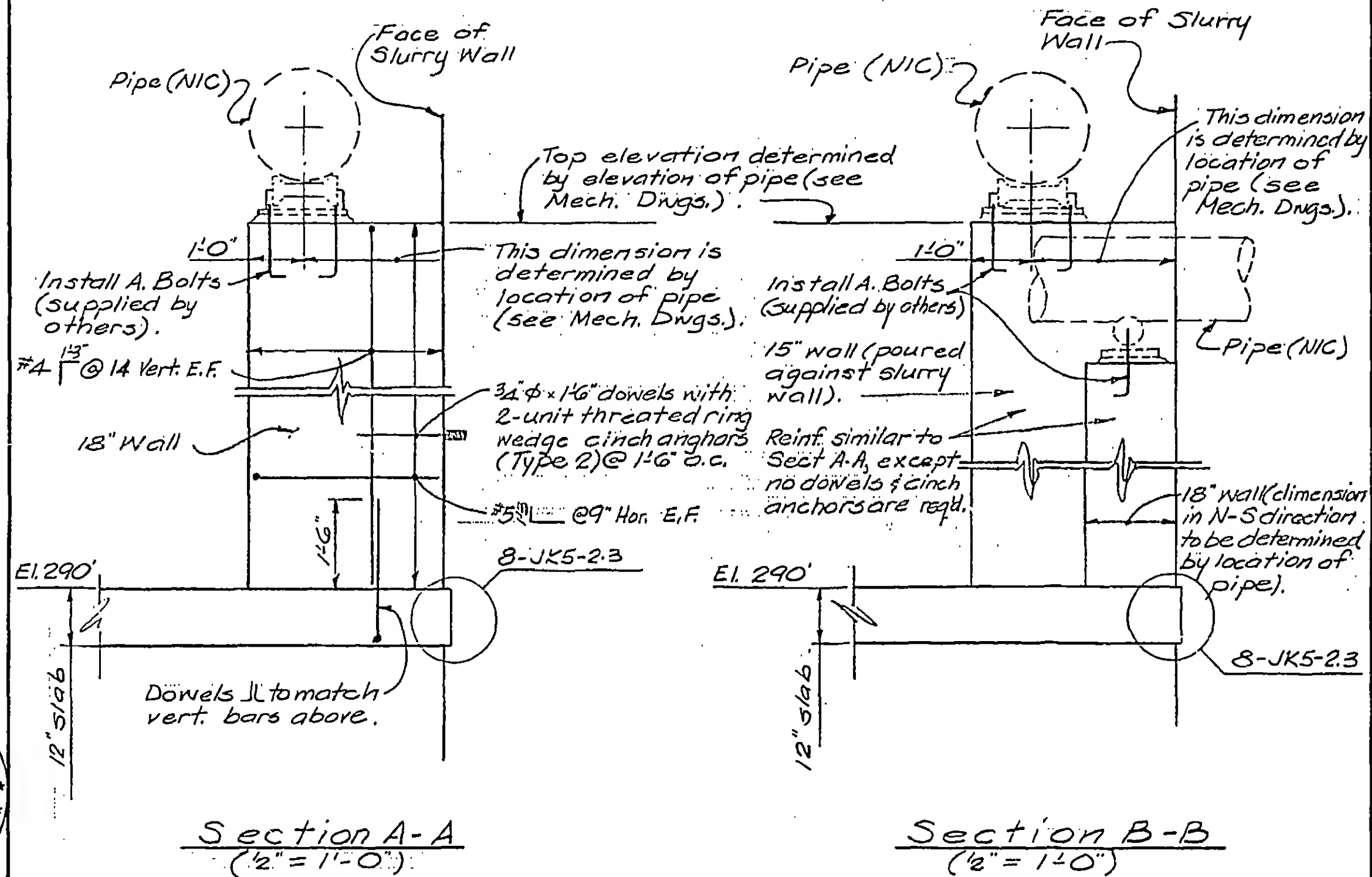
D. C. Huggins

REVIEWS

E. L.

8-JK 8-48.16

REVISIONS



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8-JK8-50.1

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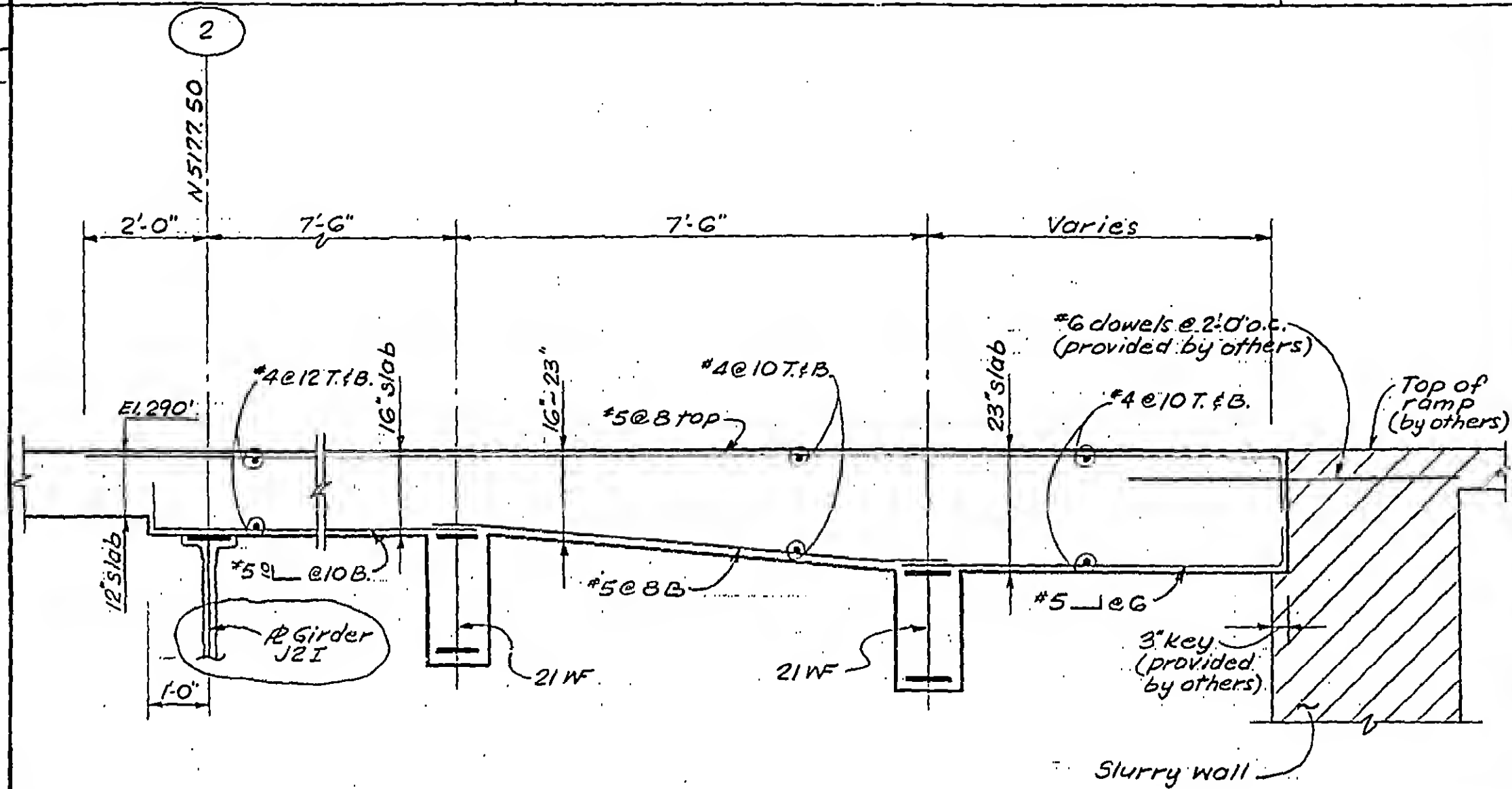
TITLE

SECTIONS AT EL. 290'-0"

DATE 7-7-69

REVISIONS

8-8-69



Section C-C

(1/2" = 1'-0")



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S.C.

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8-JK8-50.2

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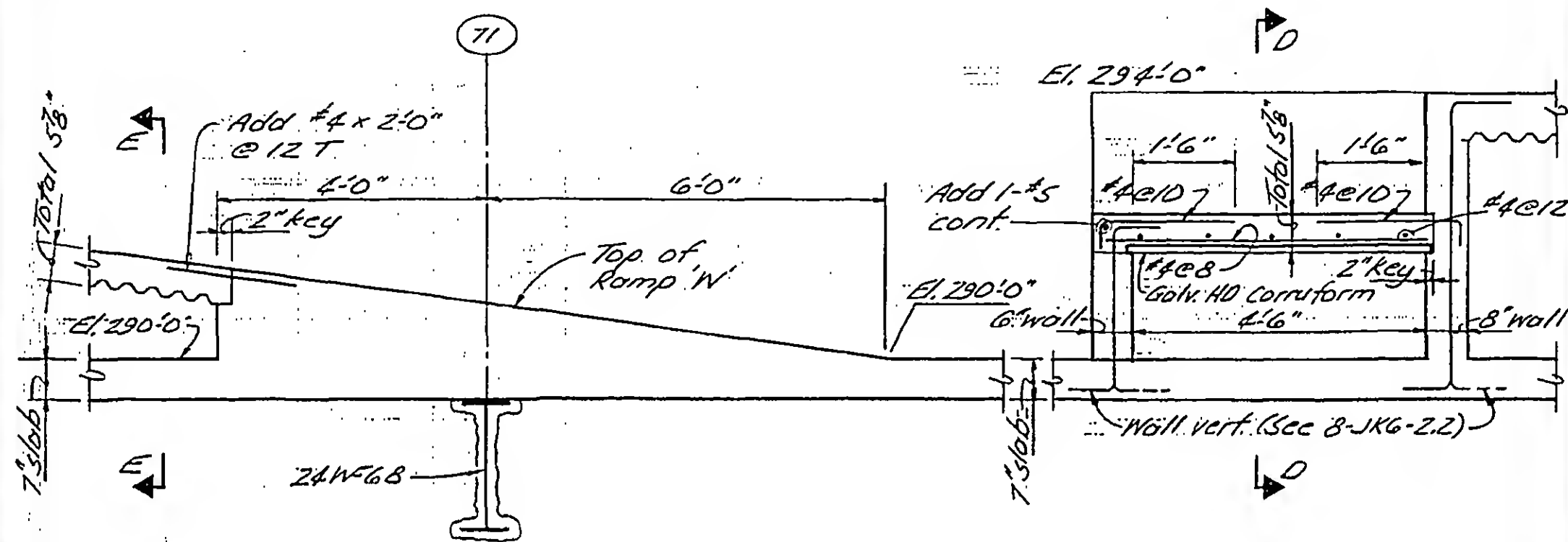
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PROJECT THE WORLD TRADE CENTER

TITLE SECTION AT EL. 290'-0"

DATE 9-26-69

REVISIONS



Section D-D
(1/2" = 1'-0")

Section E-E
(1/2" = 1'-0")



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DRAWN

J. Adams

REVIEWED

E.L.

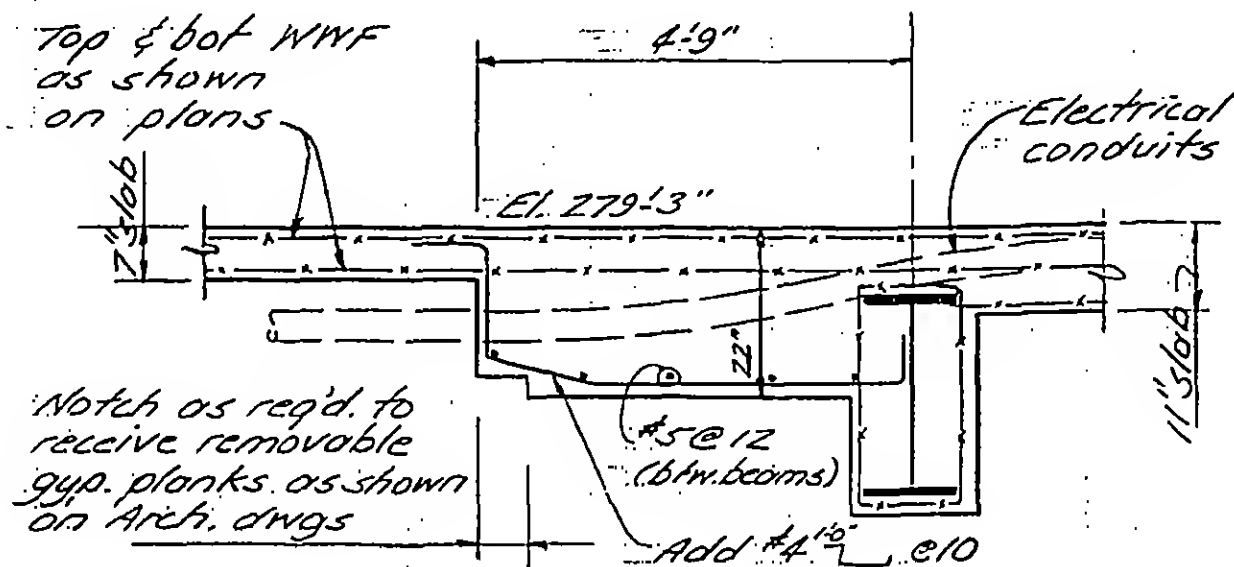
8-JK8-50.3

PROJECT THE WORLD TRADE CENTER

TITLE SECTIONS AT EL. 290'-0"

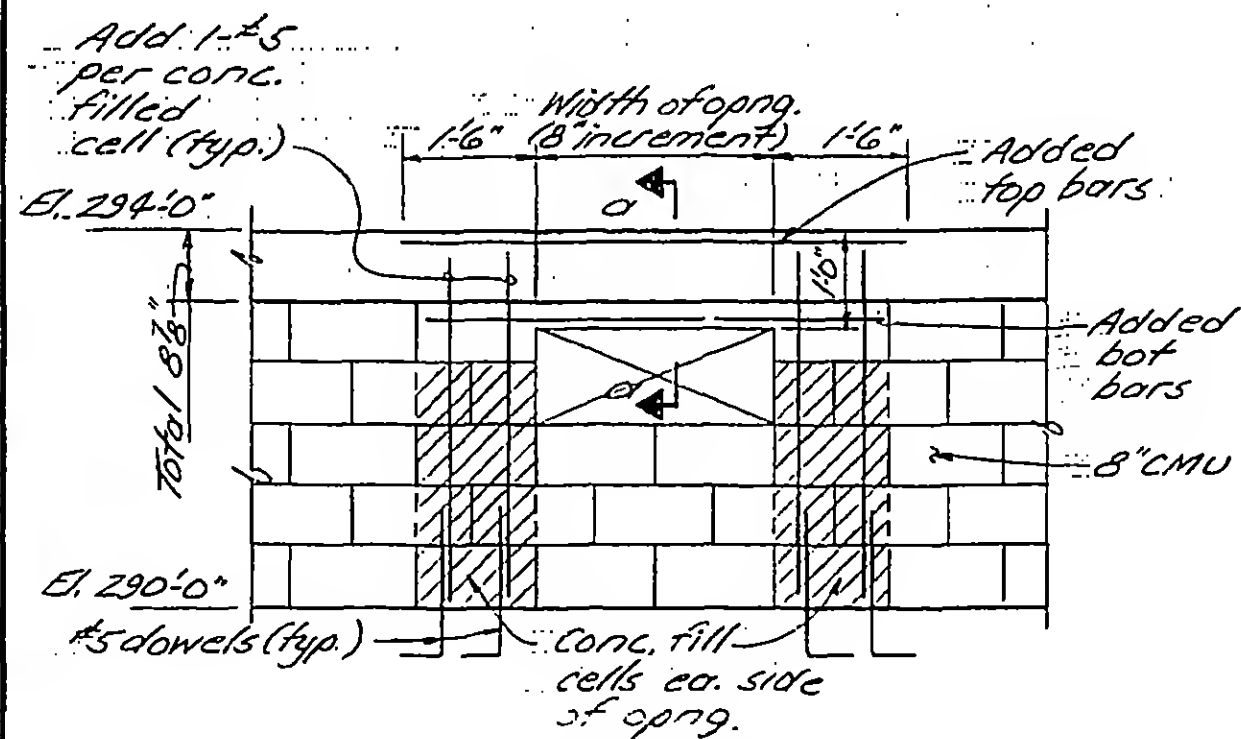
DATE 9-26-69

REVISIONS



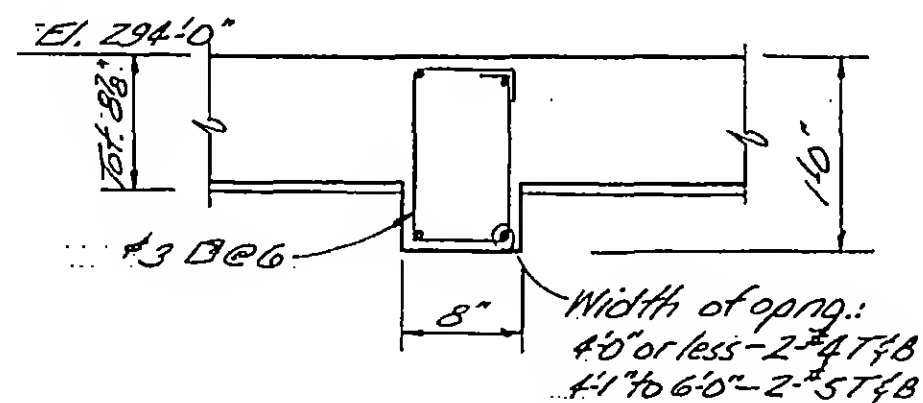
Section F-F

(1/2" = 1'-0")



Section G-G

(1/2" = 1'-0")



Section alpha-alpha

(1/2" = 1'-0")



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J. Adams

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E.L.

8-JKB-50.4

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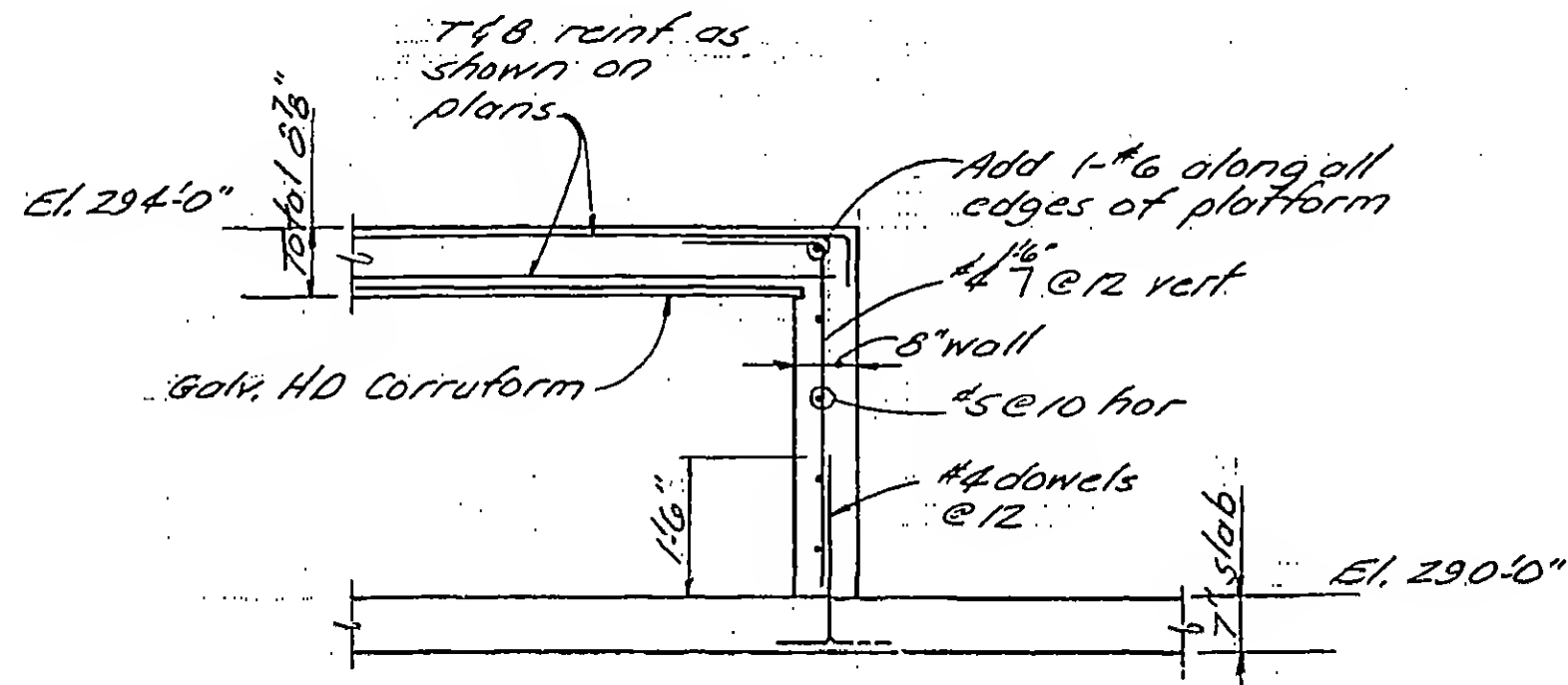
TITLE

SECTIONS AT EL. 290'-0"

DATE

9-26-69

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Where openings are
required, see Sec. E-E
on B-JK8-4

Section H-H
(1/2" = 1'-0")



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B-JK8-50.5

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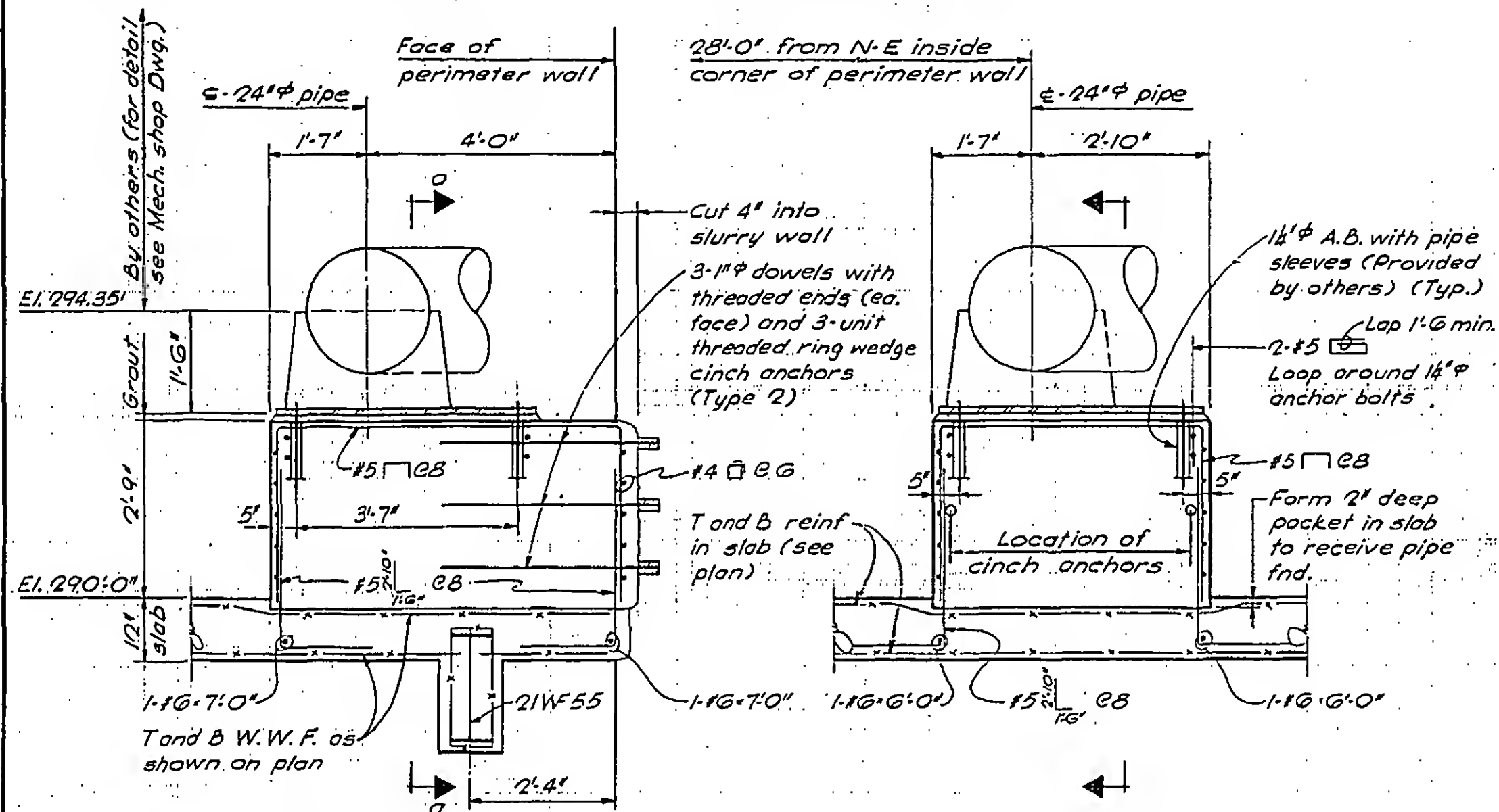
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PROJECT THE WORLD TRADE CENTER

TITLE CONCRETE SUPPORT FOR 24" ϕ STEAM MAIN

DATE 12-15-69

REVISIONS



NOTES:

1. See Mech. shop Dwg. 57-121 (F&S Mfg. Corp.) for detail of pipe supporting assembly and A. bolts.
2. All concrete to be $f'_c = 3000$ psi.



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G.K.

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B-JK8-50.6

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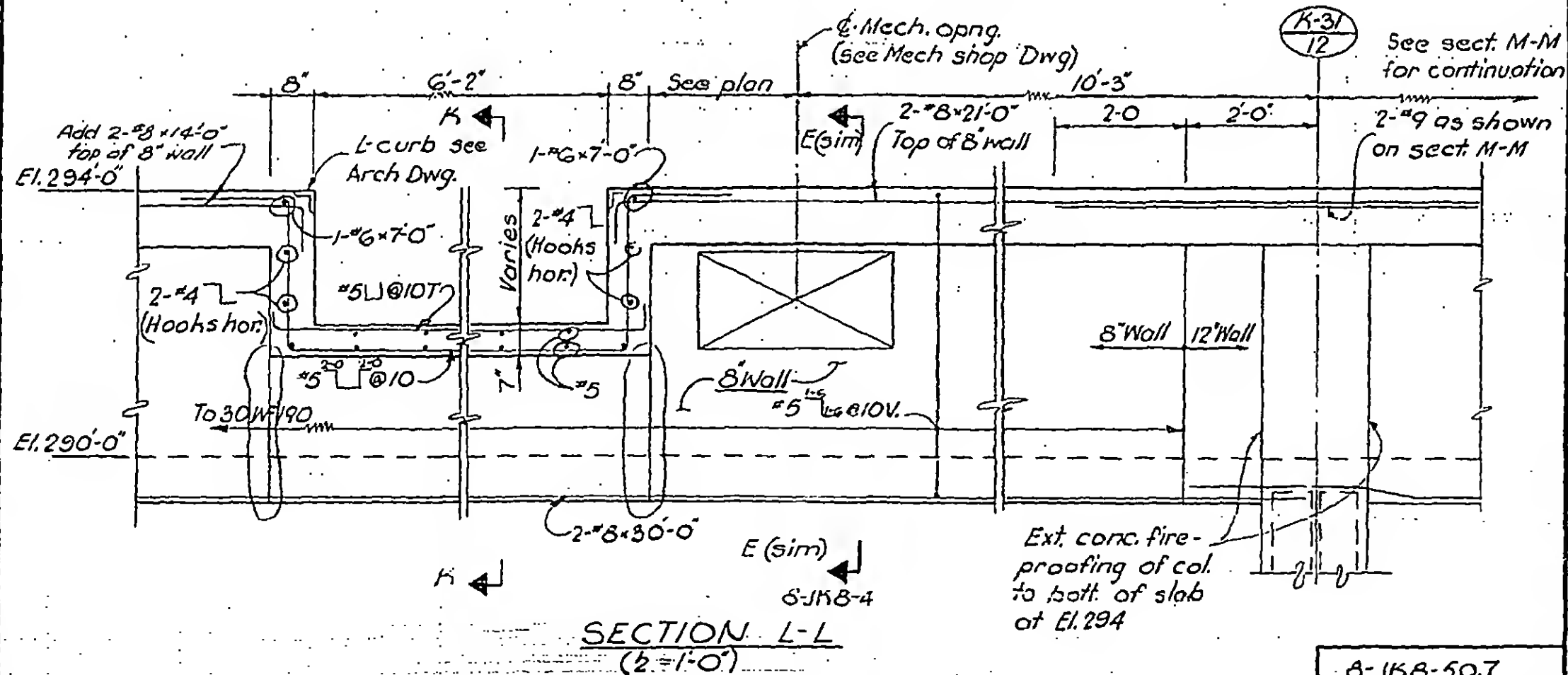
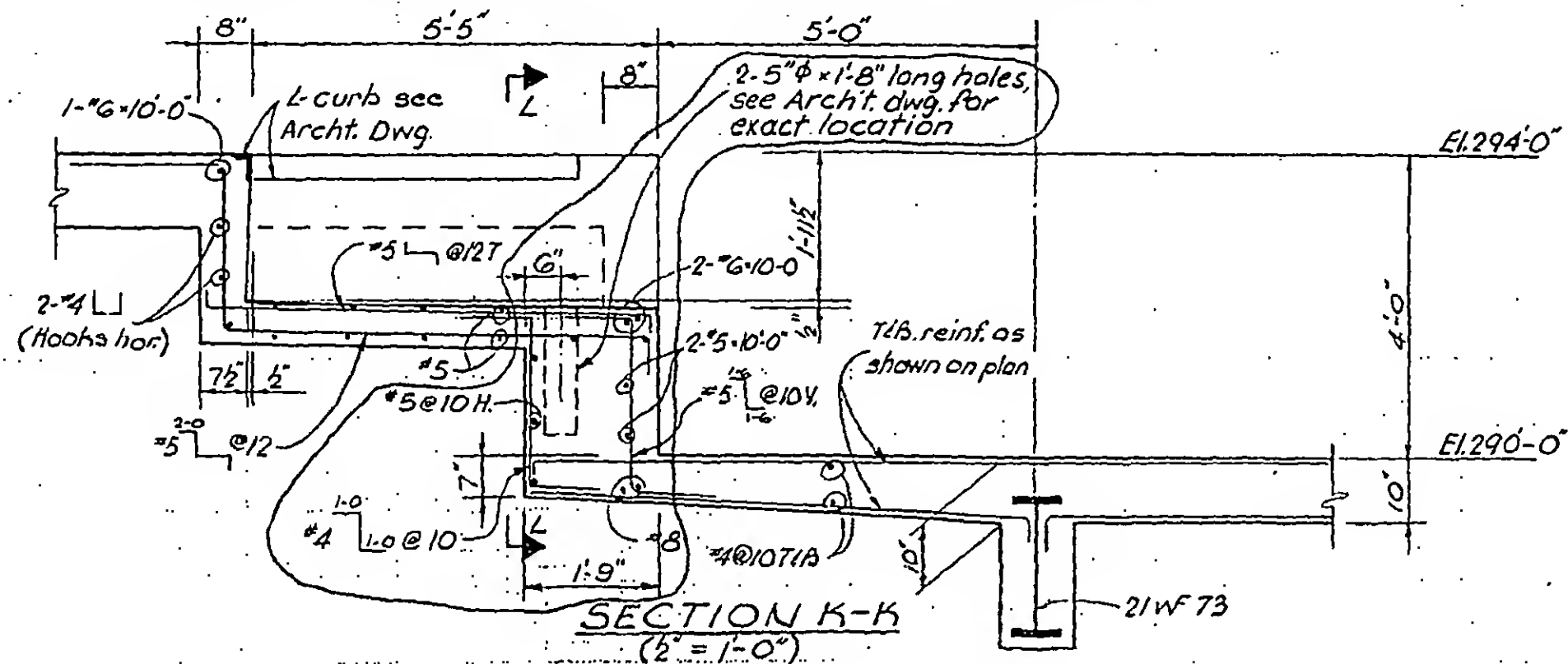
TITLE

SECTIONS AT EL. 290'-0"

DATE 1-16-70

REVISIONS

4-28-70



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8-JKB-50.7

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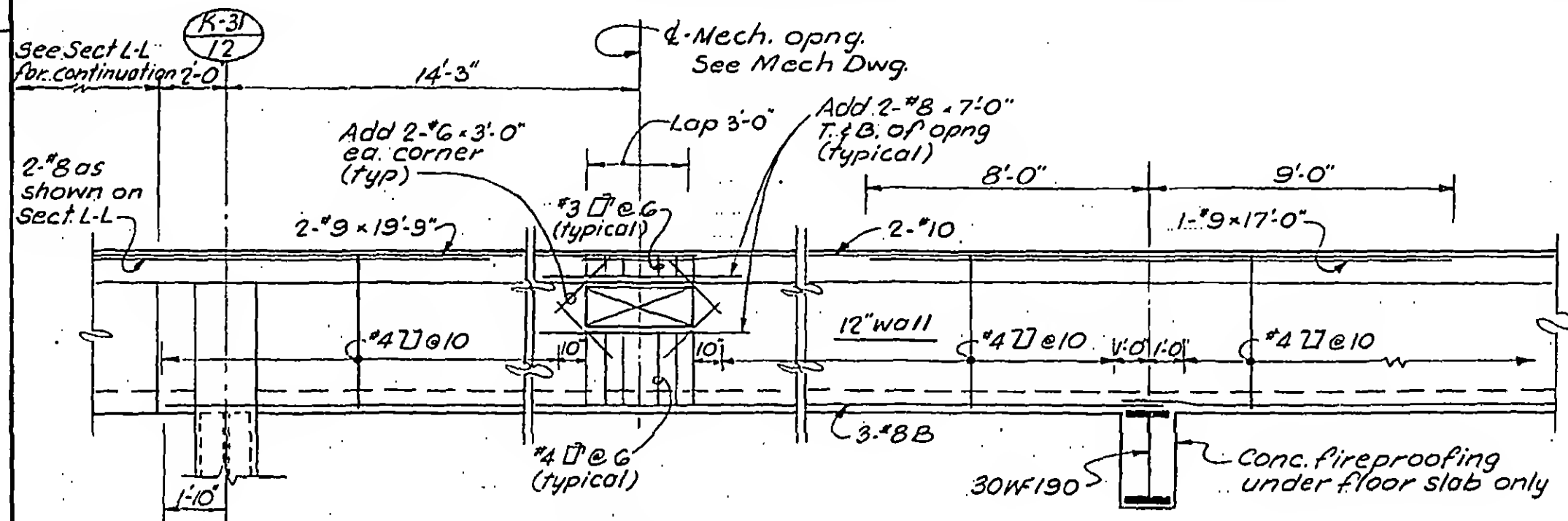
PROJECT THE WORLD TRADE CENTER

TITLE

SECTIONS AT EL. 290'-0"

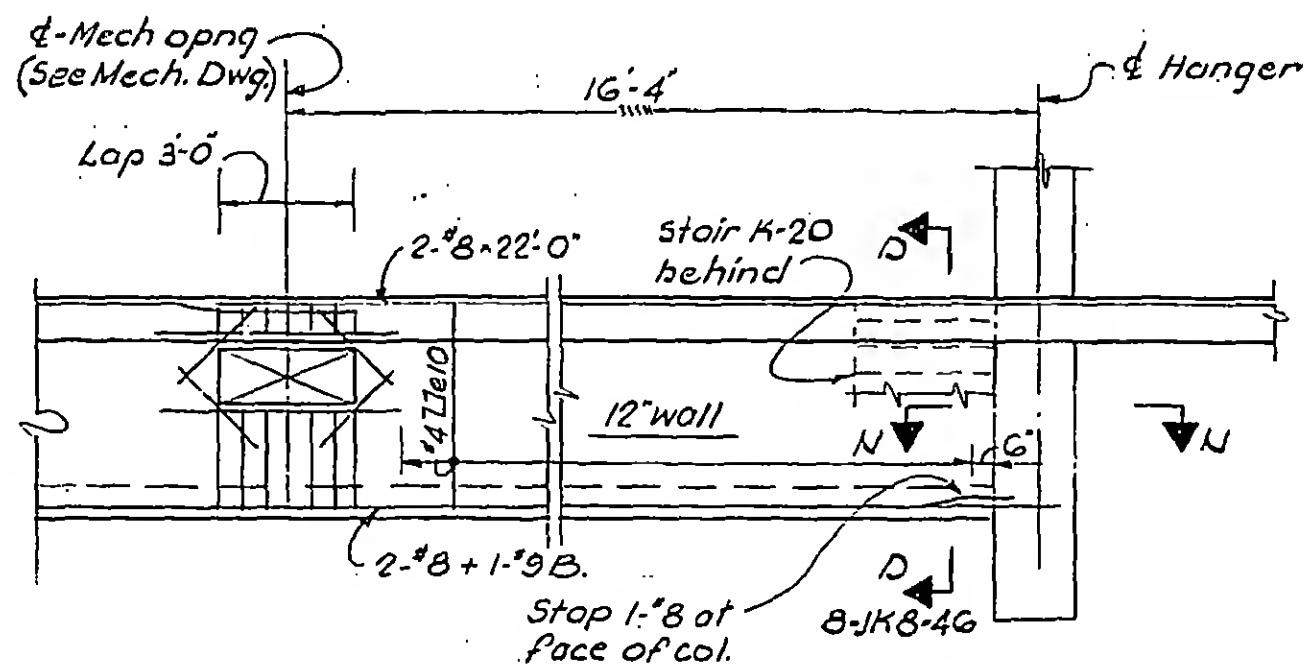
DATE 1-16-70

REVISIONS



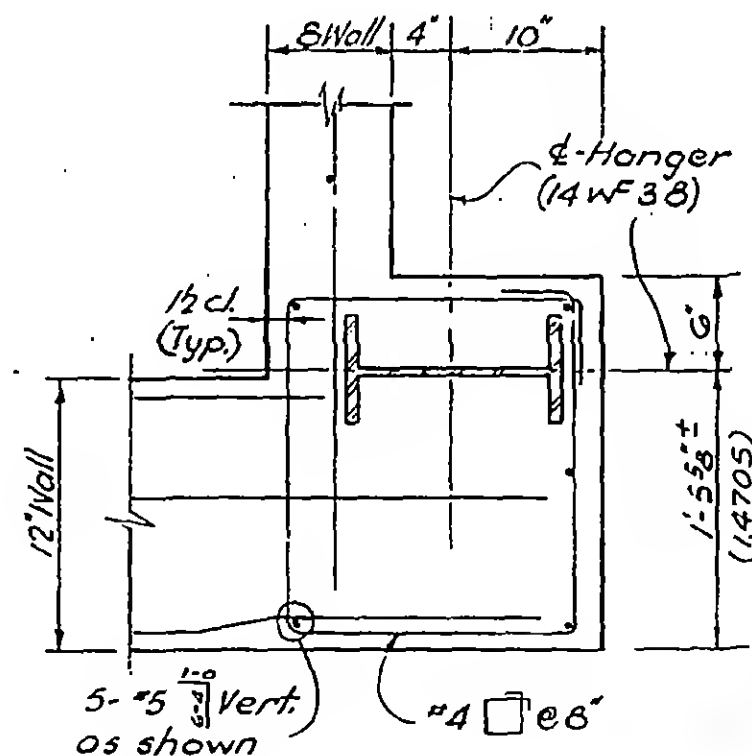
SECTION M-M

(4'-1'-0")



SECTION M-M (CONT)

14'-1'-0"



SECTION N-N

14'-1'-0"

8-JK8-50,8



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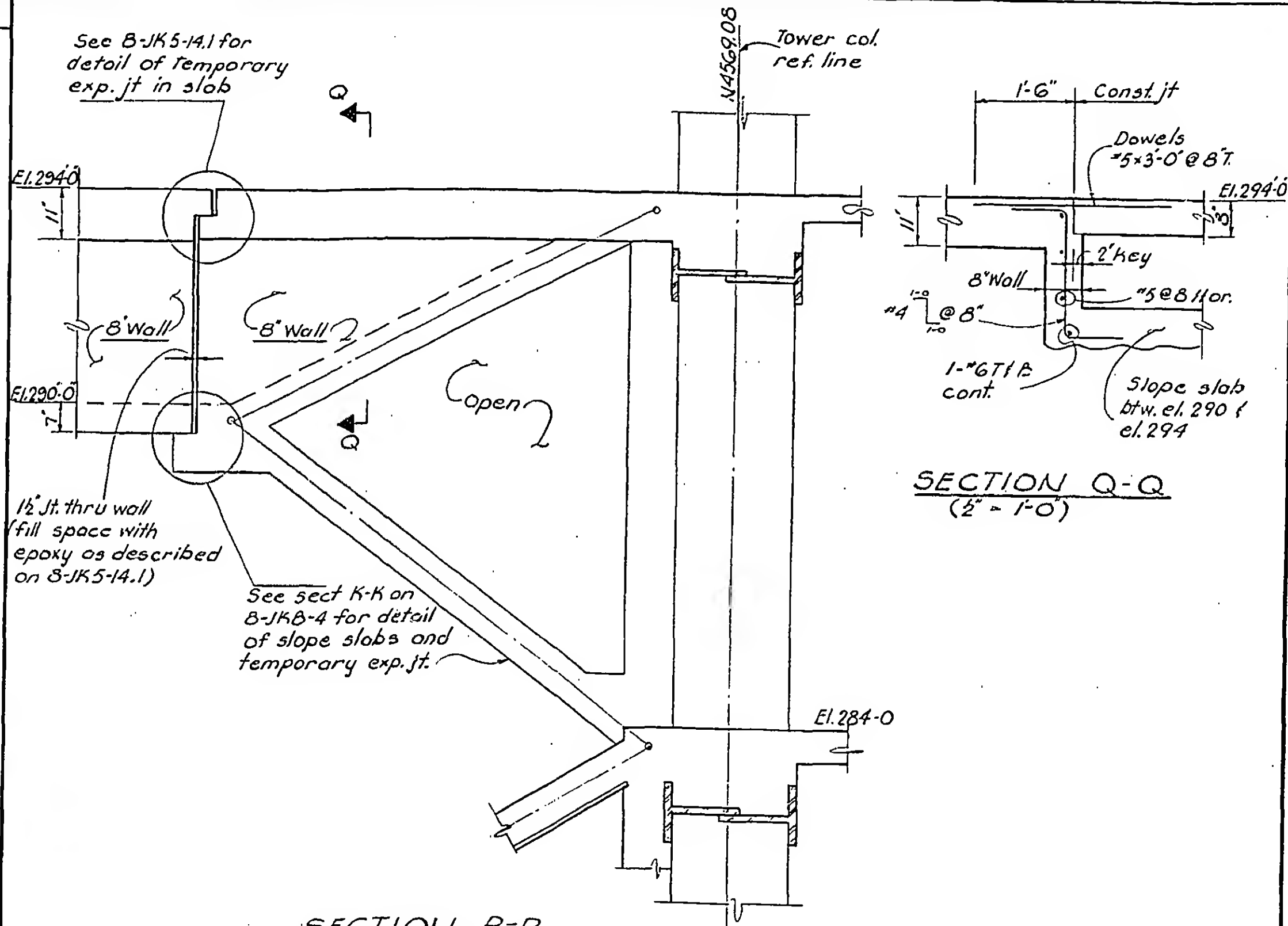
PROJECT THE WORLD TRADE CENTER

TITLE

SECTION AT EL. 290'-0"

DATE 1-16-70

REVISIONS



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B-JK8-50.9

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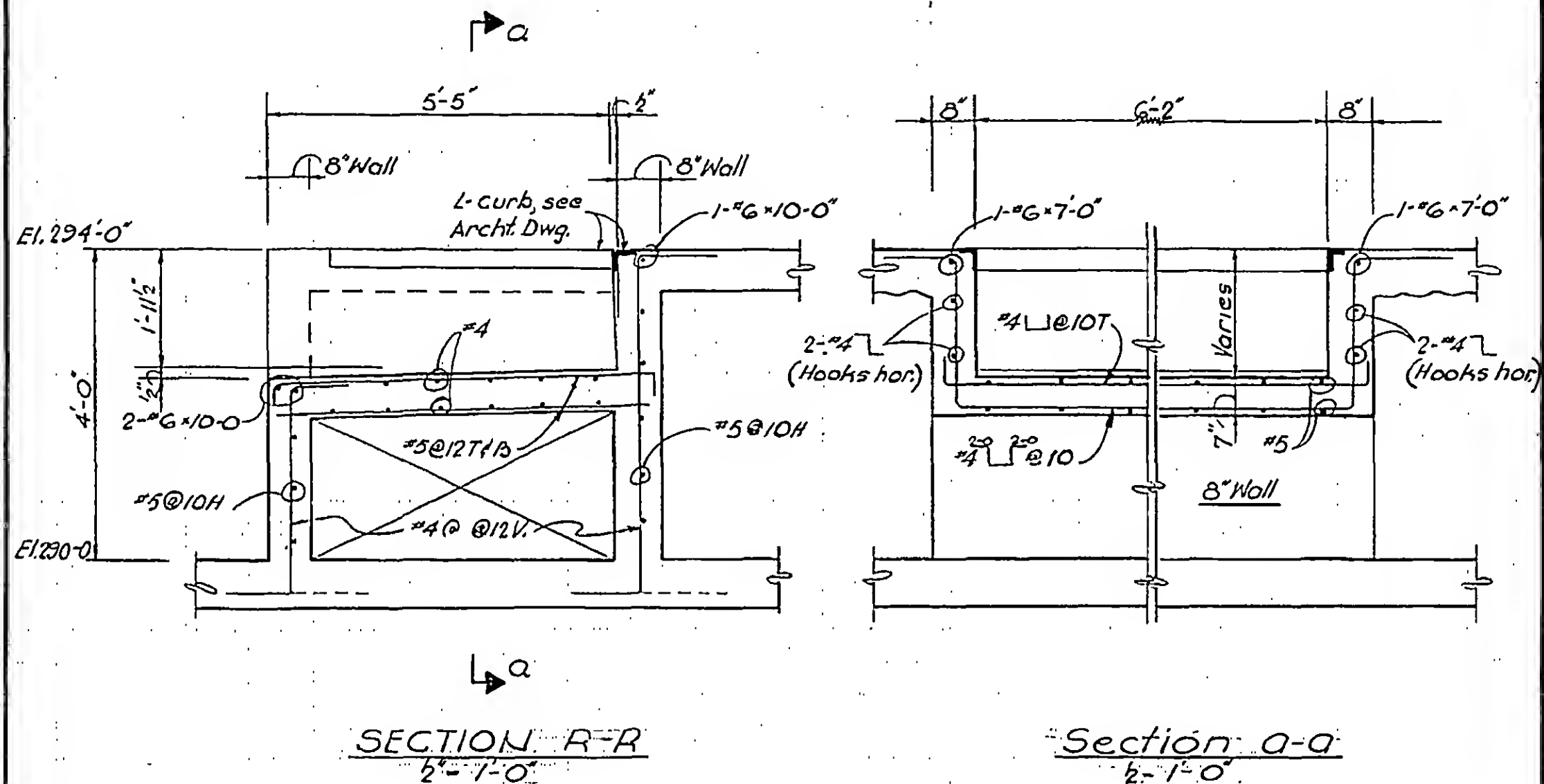
PROJECT *THE WORLD TRADE CENTER*

| TITLE | DATE |
|-------------------------------|------|
| 1. <u>General Information</u> | |
| 2. <u>Background</u> | |
| 3. <u>Objectives</u> | |
| 4. <u>Methodology</u> | |
| 5. <u>Results</u> | |
| 6. <u>Conclusions</u> | |
| 7. <u>References</u> | |
| 8. <u>Appendices</u> | |
| 9. <u>Tables</u> | |
| 10. <u>Figures</u> | |
| 11. <u>Summary</u> | |
| 12. <u>Conclusion</u> | |
| 13. <u>References</u> | |
| 14. <u>Appendices</u> | |
| 15. <u>Tables</u> | |
| 16. <u>Figures</u> | |
| 17. <u>Summary</u> | |
| 18. <u>Conclusion</u> | |
| 19. <u>References</u> | |
| 20. <u>Appendices</u> | |
| 21. <u>Tables</u> | |
| 22. <u>Figures</u> | |
| 23. <u>Summary</u> | |
| 24. <u>Conclusion</u> | |
| 25. <u>References</u> | |
| 26. <u>Appendices</u> | |
| 27. <u>Tables</u> | |
| 28. <u>Figures</u> | |
| 29. <u>Summary</u> | |
| 30. <u>Conclusion</u> | |
| 31. <u>References</u> | |
| 32. <u>Appendices</u> | |
| 33. <u>Tables</u> | |
| 34. <u>Figures</u> | |
| 35. <u>Summary</u> | |
| 36. <u>Conclusion</u> | |
| 37. <u>References</u> | |
| 38. <u>Appendices</u> | |
| 39. <u>Tables</u> | |
| 40. <u>Figures</u> | |
| 41. <u>Summary</u> | |
| 42. <u>Conclusion</u> | |
| 43. <u>References</u> | |
| 44. <u>Appendices</u> | |
| 45. <u>Tables</u> | |
| 46. <u>Figures</u> | |
| 47. <u>Summary</u> | |
| 48. <u>Conclusion</u> | |
| 49. <u>References</u> | |
| 50. <u>Appendices</u> | |
| 51. <u>Tables</u> | |
| 52. <u>Figures</u> | |
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| 54. <u>Conclusion</u> | |
| 55. <u>References</u> | |
| 56. <u>Appendices</u> | |
| 57. <u>Tables</u> | |
| 58. <u>Figures</u> | |
| 59. <u>Summary</u> | |
| 60. <u>Conclusion</u> | |
| 61. <u>References</u> | |
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| 63. <u>Tables</u> | |
| 64. <u>Figures</u> | |
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| 66. <u>Conclusion</u> | |
| 67. <u>References</u> | |
| 68. <u>Appendices</u> | |
| 69. <u>Tables</u> | |
| 70. <u>Figures</u> | |
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| 97. <u>References</u> | |
| 98. <u>Appendices</u> | |
| 99. <u>Tables</u> | |
| 100. <u>Figures</u> | |

SECTIONS AT EL 290'-0"

DATE 1-16-70

REVISIONS



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DRAWN

D. C. Huggins

REVIEWED

E.L.

8-JK 8-50:10

SKILLING, HELLE, CHRISTIANSEN, ROBERTSON

Structural & Civil Engineers

PROJECT THE WORLD TRADE CENTER

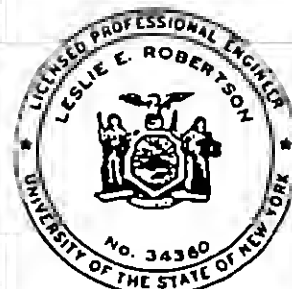
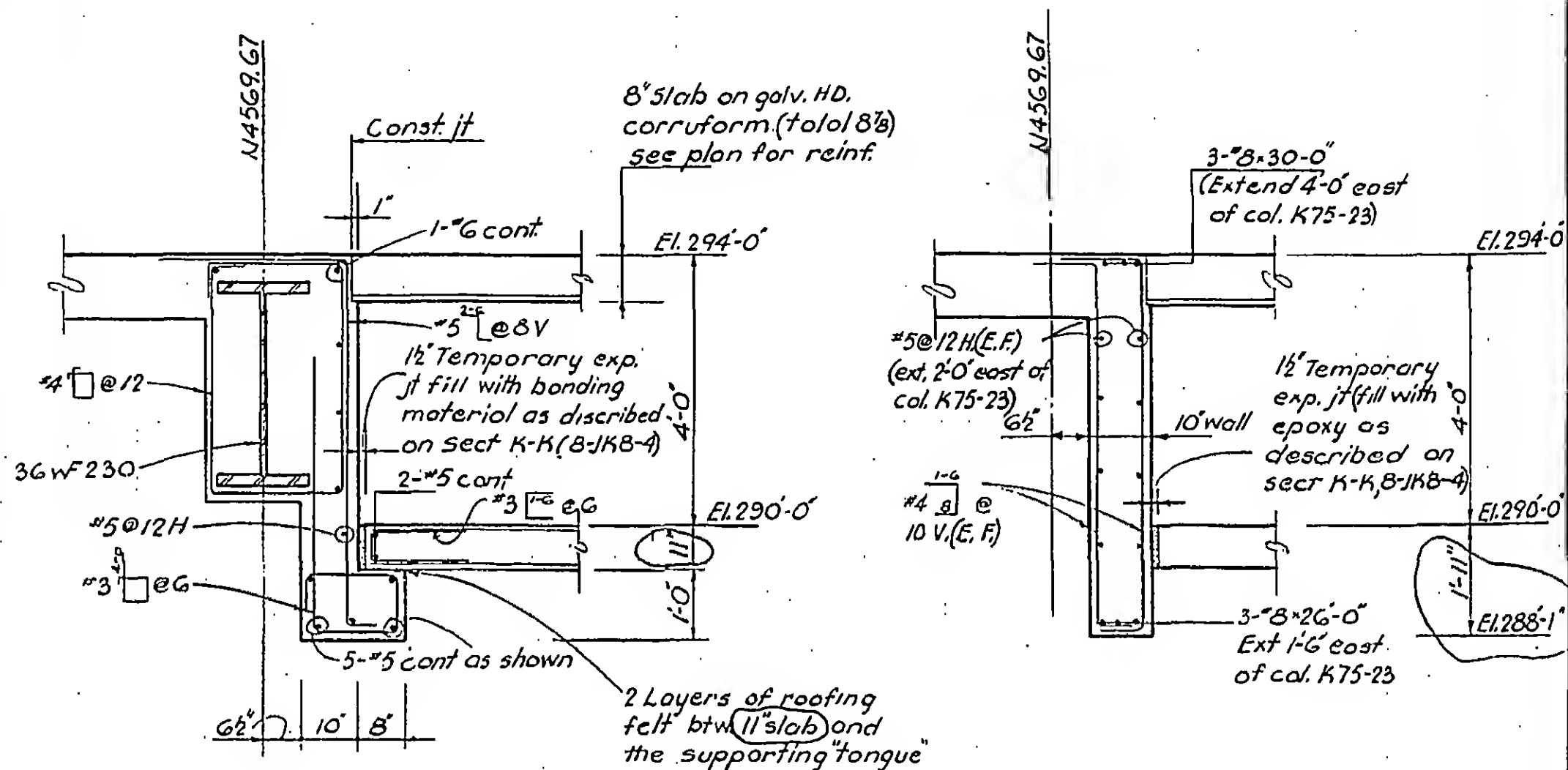
TITLE

SECTION AT EL. 290'-0"

DATE 1-16-70

REVISIONS

4-23-70



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DRAWN
D.C. Huggins

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E.L.

8-JK8-50.11

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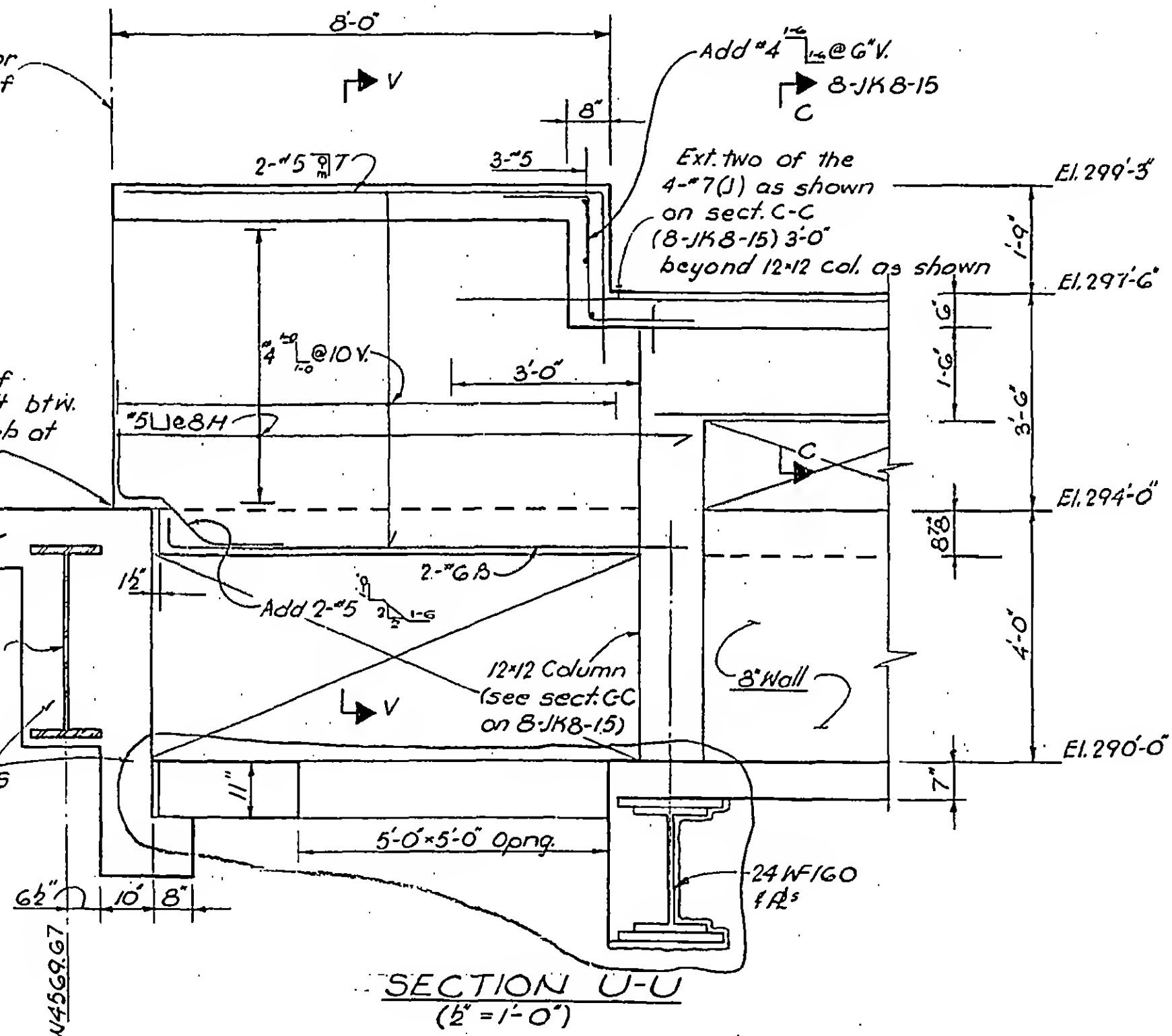
TITLE

SECTIONS AT EI 290'-0"

DATE 1-16-70

REVISIONS

4-23-70

See plan for
location of
W.P.2 Layers of
roofing felt btw.
8" wall & slab at
El. 294'-0"See sect. S-S
for detail &
reinf

DESIGNED

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D.C. Huggins

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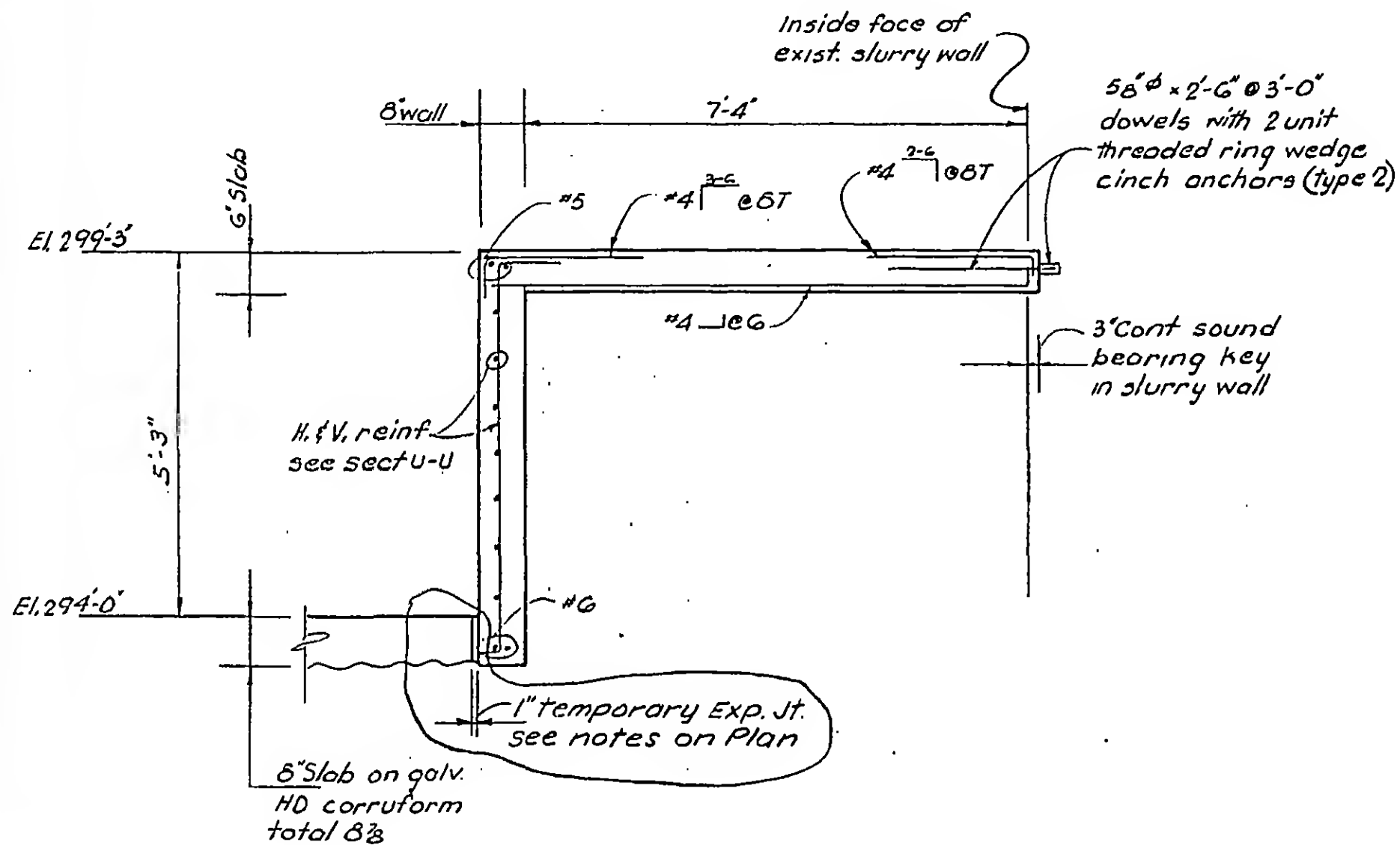
TITLE

SECTIONS EL. 290'-0"

DATE 1-16-70

REVISIONS

3-30-70

SECTION V-V
(2' = 1'-0")

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D.C. Huggins

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E.L.

8-JK 8-50.13

5, 2-0 0001

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